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THE
NATURAL HISTORY
OF
THE YEAR.



THE
NATURAL HISTORY
OF
THE YEAR.

BEING AN ENLARGEMENT OF
DR. AIKIN'S
CALENDAR OF NATURE.

By ARTHUR AIKIN.

SECOND EDITION.

LONDON:

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1799.

THE

OF

CHURCH

BY

1847

ADVERTISEMENT.

THE favour of the public having conducted *The Calendar of Nature* through several editions, the present Editor thought that he should be performing no unacceptable office in making such additions to it as modern discoveries in natural history have afforded. By the insertion of some new articles from authors of the best credit, and the occasional enlargement of some of the old ones, it was his intention to compose a history of the yearly operations of nature, if not perfect, yet, at least as far as it went, correct.

For

For this purpose recourse has been had to Mr. Pennant's valuable Zoological works, to Bomare's Dictionary of Natural History, and to the admirable Natural History of Selborne, by the late Mr. White. Other writers have been occasionally consulted, and a few circumstances are inserted for which the Editor is himself personally answerable. How far this edition is worthy of notice, it remains for that public to whom it is now offered to determine.

TO
JOHN AIKIN, M.D.

THIS
ENLARGED EDITION

OF HIS OWN
ORIGINAL WORK

IS INSCRIBED

BY
HIS TRULY AFFECTIONATE SON,

ARTHUR AIKIN.

THE JOURNAL OF THE

ROYAL

ANTHROPOLOGICAL INSTITUTE

OF GREAT BRITAIN

AND IRELAND

AND THE

ETHNOLOGICAL

SOCIETY OF AMERICA

AND THE

NATURAL HISTORY

OF

THE YEAR.

THE portion of time here to be treated of, and which is called a *year*, is produced by the complete revolution of the earth round the sun, a period of 365 days and nearly six hours. It is indifferent for the purpose of measuring time at what part of this period the beginning of the year is made, provided an exact account be kept of the return of the earth to the same point from which it set out. There are however four points in this annual revolution which are marked out by striking distinctions. These are the two *equinoxes* and the two *solstices*.

In order to understand what these mean, we are first to observe, that while the earth

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is

is revolving round the sun, it is at the same time constantly spinning on its own axle, and thus successively presenting one half of its surface to the sun, while the other half is turned from it. This makes the difference of day and night; for as each part of the surface comes in succession to front the sun, it is said to be day in that part, as when it has turned from the sun it is its night. Now if the axle of the earth were perpendicular to the plane in which it moves round the sun, in other words, if it *spun upright*, it is obvious that the day and night would always be of equal length over the whole globe, every point of it having as much space to pass, turned towards the sun, as turned from it. But this is not the case; for its axle is oblique, varying about $23\frac{1}{2}$ degrees from the perpendicular: for which reason, during half of the revolution the northern hemisphere of the globe enjoys a greater portion of the sun's light than the southern, and consequently its days are

are longer than its nights: during the other half the opposite takes place, and its nights are longer than its days; and in the southern hemisphere the same happens, at contrary times. It is only therefore on the central ring of the globe, called the equator, or equinoctial line, that the days and nights are always equal. In all the other parts they are equal only on two days in the year, called the vernal and autumnal equinoxes, which happen on or near March 25, and September 23. Midway between these points are the two solstices; that of our summer, when the days in the northern hemisphere are at their greatest length, which is about June 21; and that of our winter, when they are shortest, about December 21: the reverse taking place in the southern hemisphere.

The annexed figures with their explanations will give a better idea of these changes than can be conveyed in words, and will also show that the difference be-

tween the days and nights goes on increasing from the equator to the poles, at which last there is only one day and one night in the year. The same circumstance, namely the obliquity of the earth's axis, is also the cause of the difference of the climates and seasons with respect to *heat*. At the equator the rays of the sun fall perpendicularly on the earth, and therefore act with more power; whence arises the great heat of that and the tropical regions, which extend to a certain distance from it on each side. On advancing towards both poles, the rays fall more and more obliquely, and therefore act with less and less force; whence this space is occupied, first by the temperate zones extending on each side the tropics, and then by the frigid zones extending from these to the poles. So weak is the power of the sun in these last, owing to the great obliquity with which its rays strike the earth, that they are buried in almost perpetual snow and ice. These differences

ferences are those of *climate*. As to the differences of *season*, they depend upon the length of time that the earth is exposed to the rays of the sun, as well as the greater or less directness with which the rays strike it. During the short days the influence of the sun is less in both these respects, which therefore produces winter; during the long days it is greater, and therefore causes summer; and the middle seasons of spring and autumn correspond with the equality of nights and days: it is to be remarked, however, that this correspondence is not perfectly exact, for the severest frosts usually take place after the days have begun to lengthen, as the most oppressive heats are found to happen when the days are in the wane; the reason of which is, that the earth having imbibed more heat than it gave out during the summer months, is not exhausted of its superabundant warmth till about the close of the year, or after the winter solstice; in like manner, on account of the waste of

the earth's heat being greater in winter than its supply, it continues to imbibe heat during the spring, and is not saturated till after the summer solstice. Hence also arises the difference between the spring and autumn, though the position of the sun with respect to the earth is in both the same: the heat of the spring is inferior to that of autumn both in regularity and degree, for, owing to the deficiency of warmth in the earth, it is constantly imbibing the floating heat of the lower part of the atmosphere; hence originates a large collection of clouds, which intercepting the rays of the sun, combines together with the absorption of the earth to deprive the air of much of its heat. Whereas in autumn, the earth being hotter than the air, gives out regularly a large portion of warmth, which naturally tending to disperse the clouds, affords a free passage to the solar rays: thus autumn ought in general to be hotter than spring, for these two reasons; first, that the earth
itself

itself gives out a considerable quantity of heat, and secondly, that the rays of the sun meet with fewer interruptions in passing thence to the earth. At the equator there is no proper difference of seasons, except as occasioned by rainy or windy periods, which proceed from other causes, and the case is much the same on each side of it for some distance.

The island of Great Britain is situated in the northern hemisphere, and in that part of the temperate zone which is nearer to the frigid than the torrid zone. Geographers divide the space from the equator to the pole on each side into 90 degrees, which are called degrees of latitude; and beginning from the equator, they reckon the latitude of every place by the number of degrees it is distant north or south from that line. Now Great Britain is comprehended between the 50th and 58½th degree of north latitude. Hence the difference of the light and heat, in the different seasons of the year,

is very considerable among us; and all the variations in nature depending on these differences are strongly marked. In London, which is about the latitude of $51\frac{1}{2}$, at the winter solstice the sun is only 7 hours 34 minutes above the horizon; at the summer solstice it is 16 hours 26 minutes; and in the north of Scotland the difference is much greater.

J A N U A R Y.

Stern winter's icy breath, intensely keen,
 Now chills the blood, and withers every green ;
 Bright shines the azure sky, serenely fair,
 Or driving snows obscure the turbid air.

A YEAR is not only an astronomical, but a natural period, and the first imperfect year of ancient times must, no doubt, have originated from observing the regular vicissitudes of heat and cold, of the leafing, flowering, and fruiting of the various tribes of vegetables ; and the coincidence of these appearances with the laying and hatching of birds, and the production of the young of quadrupeds. This way of reckoning, however, was subject to so many variations, that it was soon necessary to make choice of some more constant periodical occurrence by which to mark the annual revolution.

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The ancient year began in the month of March, and it may appear singular that modern civilized nations should choose to commence their year at a period when nature lies almost dormant, in preference to that season when the race of vegetables and animals is actually renewed. In defence of the present custom it may, however, be said, that the time of the renovation of nature varies in different countries, and is affected so much by accidental circumstances as to preclude the possibility of an exact calculation; that *now* the year does not commence till ten days after the winter solstice, and that the lengthening of the day, as it is the chief cause, so it is in fact the commencement of spring.

So little influence, however, has this change at first, that the month of January is usually found to be that in which the cold is most intense; there being little or no frost in this country before the shortest day, conformably to the old saying, “ as
the

the days begin to lengthen, the frost begins to strengthen." The weather is commonly either bright dry frost, or fog and snow, with cold dark showers about the close of the month.

It used formerly to be a subject of much dispute among natural philosophers, whether frost was a particular substance, or merely the absence of a certain degree of heat. Thomson in his Seasons seems to be of the former opinion.

What art thou, Frost? and whence are thy
 keen stores

Derived, thou secret, all invading power,
Whom even th' illusive fluid cannot fly?

Myriads of little salts, or hook'd or shap'd
Like double wedges, and diffus'd immense
Thro' water, earth, and ether?

Modern philosophers have, however, very generally embraced the opposite side of the question; the *little hooked salts*, or spiculæ, which in frosty mornings are found floating in the atmosphere, or adhering

hering to the surfaces of bodies, being found by experiment to be nothing more than small crystals of ice, and capable of being resolved by heat into pure water.

The principal difficulty in the theory is, that if frost be only the absence of heat, how comes it to pass that water, when deprived of its heat, should occupy more space than it did before? for water, when frozen, is expanded, and hence ice is lighter than water, and swims upon it. The following explanation, however, will sufficiently account for this fact, without supposing that frost is a substance, which by an union with water increases the bulk of it. If any one will observe the process of the formation of ice, he will perceive that it is composed of a number of needle-like crystals, that unite to each other at *angles* of a certain size; hence the space between these crystals is much more considerable than between the particles of water, and on this account water, when
frozen,

frozen, occupies more *space* than before, though it receives no increase of weight. It may also be mentioned, that, in the act of congelation, a quantity of air is intercepted, and fixed in the ice, which generally appears to be full of bubbles. It is from this disposition in water to crystallize at angles of a particular measurement, that, if a bottle full of water hard corked be set to freeze, the bottle will be broken for want of room for the *expansion* of the water while assuming its solid form. Water-pipes often burst from the same cause, and hoops fly off from barrels; and in the intense frosts of Canada it has been found from experiments made at Quebec, that cannons and bomb-shells filled with water, and the apertures strongly plugged up, have in the course of a few hours been burst. This same property of water, when frozen, tends every year to diminish the bulk and height of the Alps and other lofty mountains: the different fissures and crevices which become filled with

with water during the summer, either from rain or the melting of the snow, are frozen during the winter, and by their irresistible expansive power detach huge masses of rock from the summits of the mountains and roll them into the valleys below, to the terror of the inhabitants ; for nothing but a wood is able to stop their impetuous and accelerated progress. In its more moderate and minute effects, the operation of this general law is productive of a very beneficial consequence to the husbandman ; for the hard clods of the ploughed fields are loosened and broken to pieces by the swelling of the water within them when frozen ; hence the earth is crumbled and prepared for receiving the seed in spring.

Nothing can be conceived more wonderful and striking than the effects of frost. To behold the liquid surface of the lake changed into a firm marble-like pavement ; to see the rapid river arrested in the midst of his course, the headlong cascade,

cascade, “ whose idle torrents only *seem* to roar,” converted into a cluster of translucent pillars of the most grotesque forms; or to view the intricate, varied, and beautiful crystallizations, that form on our windows during a winter’s night; and all these effects produced by a rapid, silent, invisible agency, cannot but strongly interest the observer. Some of these appearances, indeed, are so familiar to us, that we cease to regard them; but it is only their *frequency* that causes them to be overlooked, as is evident from the surprise and admiration which they excite in persons, who, having been born and brought up in the West-Indies or other hot climates, show the greatest surprise and pleasure upon the first sight of these phenomena.

Here glitt’ring turrets rise, upbearing high
(Fantastic misarrangement) on the roof
Large growth of what may seem the sparkling
trees

And shrubs of fairy land. The crystal drops
That

That trickle down the branches, fast congeal'd
Shoot into pillars of pellucid length,
And prop the pile they but adorn'd before.
Here grotto within grotto safe defies
The sunbeam. There imbos'd and fretted
wild

The growing wonder takes a thousand shapes
Capricious, in which fancy seeks in vain
The likeness of some object seen before.

COWPER'S TASK, V.

Snow is the water of clouds frozen. On a close examination it is found to be composed of icy darts or stars united to each other, as all crystals of water are, whether they compose ice, snow, or hoar-frost, at angles of 60 or 120 degrees. Its whiteness is owing to the small particles into which it is divided, refracting and reflecting, instead of transmitting, all the rays of light that fall upon it. Ice, when pounded, becomes equally white. Snow is useful by covering the plants and protecting them from the severity of the frost; for it keeps them very dry; and
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at a certain depth under the snow the cold continues always of the same moderate temperature, namely, at 32 degrees, or just at the freezing point. It is, however, a very fatal enemy to shrubs that grow in a *southern* exposure, for the heat of the sun at noon partially melts the snow, which by the cold of the following night is converted into a mass of ice, and thus destroys the most flourishing and hardy plants; and it has frequently been found by experience in severe winters, that those vegetables which have been exposed to the rays of the sun have been almost totally cut off, while those under a north shelter have sustained no injury.

The beauty of a country all clothed in new fallen snow is very striking.

The cherish'd fields

Put on their winter robe of purest white.

'Tis brightness all; save where the new snow
melts

Along the mazy current. Low the woods

Bow their hoar head; and ere the languid
sun

Faint from the west emits his evening ray,
Earth's universal face, deep hid and chill,
Is one wide dazzling waste, that buries deep
The works of man. THOMSON.

Hail-stones are drops of rain suddenly congealed into a hard mass, so as to preserve their figure. They often fall in the warmer seasons of the year, as at all times the upper parts of the atmosphere are very cold.

Hoar-frost is dew or mist frozen. It adheres to every object on which it falls, and produces figures of incomparable beauty and elegance. Every twig and blade of grass is beset by it with innumerable glittering pearly drops, or silvery plumage, beyond the skill of any artist to imitate.

Sometimes it happens that a sudden shower of rain falls during a frost, and immediately turns to ice. A remarkable scene is then produced, which the following lines most beautifully describe.

Ere yet the clouds let fall the treasur'd snow,
Or winds begun thro' hazy skies to blow,
At ev'ning a keen eastern breeze arose,
And the descending rain unsullied froze.
Soon as the silent shades of night withdrew,
The ruddy morn disclos'd at once to view
The face of nature in a rich disguise,
And brighten'd every object to my eyes :
For every shrub, and every blade of grass,
And every pointed thorn seem'd wrought in
 glass ;
In pearls and rubies rich the hawthorns flow,
While thro' the ice the crimson berries glow.
The thick-sprung reeds the wat'ry marshes
 yield,
Seem polish'd lances in a hostile field.
The stag, in limpid currents, with surprise,
Sees crystal branches on his forehead rise.
The spreading oak, the beech and tow'ring
 pine,
Glaz'd over, in the freezing ether shine.
The frightened birds the rattling branches shun,
That wave and glitter in the distant sun.
When, if a sudden gust of wind arise,
The brittle forest into atom flies :
The cracking wood beneath the tempest
 bends,

And in a spangled show'r the prospect ends.

PHILIPS, *Lett. from Copenhagen.*

In such a case prodigious mischief has been done in the woods by the breaking down of vast arms of trees which were overloaded by the weight of the incrusting ice; and even rooks, attempting to fly, have been taken, owing to their wings being frozen together, by the fleet that congealed as it fell.

The inclemency of the season is shown by its effects on animals. Those which are called the *cold-blooded*, that is, where the whole of the blood does not circulate through the lungs, as the frog, the snake, and the lizard, are benumbed by it in their winter quarters, and continue in this deathlike state till the return of warm weather. Others, as the dormouse, the marmot, and bear, sleep away the greater part of this uncomfortable period; while others, as the squirrel and field mouse, which lay up stores of provision during the autumn, keep close in their retreats, sleeping a good deal during the intensity of the frost, but, during the less severe
part

part of the winter, being in an active state, have recourse to their hoards for a supply of subsistence. But animals in a state of sleep require nourishment, though not in such large quantities as those which continue actively alive; the necessity of food being proportioned to the rapidity of the circulation of the blood. Since, however, in a state of torpor, it is impossible to take in nourishment, these animals must perish, were it not for a store of food prepared and laid up within them in the form of fat: for animals of this class become very fat before they retire to their winter habitations, and come out again in the spring lean and emaciated, as is the case with the bear, marmot, &c. With respect to the cold-blooded animals, which accumulate no fat, the continuance of their life is provided for by other means. All these animals are capable, during their active state, of supporting the want of food for a great length of time; at which period the pulsations of

the heart, which is the organ for circulating the blood, amount to about 60 in a minute; but, during their *torpid* state, do not exceed the same number in the space of an hour; so that the pulsations of the heart, during the three months of winter that they become insensible, amount to no more than the usual number of 36 hours in their active state, and their demand for nourishment is probably diminished in the same proportion.

The other animals, that are not rendered torpid by the cold, yet feel very sensibly its effects, which are a deficiency of food and heat; to obviate these pressing evils, the wild quadrupeds of prey by which this island is inhabited, such as the fox, the weasel, the polecat, and others, rendered bold by famine, make incursions into the hen-roost and farm-yard: happily, however, we are acquainted only by report with those formidable troops of wolves which at this season occasionally attack the villages among the Alps, and
in

in other mountainous and woody parts of the continent : of these ravenous invaders Thomson has given a most spirited description.

By wint'ry famine rous'd, from all the tract
Of horrid mountains which the shining Alps,
And wavy Appenine, and Pyrenees,
Branch out stupendous into distant lands ;
Cruel as death, and hungry as the grave !
Burning for blood ! bony, and ghaunt, and
grim !

Assembling *wolves* in raging troops descend ;
And, pouring o'er the country, bear along,
Keen as the north-wind sweeps the glossy
snow.

All is their prize. They fasten on the feed,
Press him to earth, and pierce his mighty
heart,

Nor can the bull his awful front defend,
Or shake the murdering savages away.
Rapacious, at the mother's throat they fly,
And tear the screaming infant from her breast.
The godlike face of man avails him nought.
But if, apprized of the severe attack,
The country be shut up, lur'd by the scent,
On church-yards drear (inhuman to relate)
The disappointed prowlers fall, and dig

The shrouded body from the grave; o'er
which
Mix'd with foul shades, and frighted ghosts,
they howl.

At this season also hares, forgetting their natural timidity, enter the gardens to brouze on the cultivated vegetables, and leaving their tracks in the snow, are frequently hunted down or caught in snares. Rabbits, pressed with hunger, enter into plantations, where they destroy multitudes of trees by barking them as high as they are able to reach.

The numerous tribes of birds also quit their retreats, congregate in large flocks, and, in search of food, approach the habitations of man. Larks and various other small birds betake themselves for shelter to the warm stubble. Fieldfares, thrushes, and blackbirds, nestle together under hedges and ditch banks, and frequent the warm manured fields in the neighbourhood of towns. Sparrows, yellow-

low-hammers, and chaffinches, crowd into the farm-yard, and attend the barn-doors to pick their scanty fare from the straw and chaff. The tit mouse pulls straw out of thatch, in search of flies and other insects which have sheltered there. From wet meadows many birds, such as red-wings, fieldfares, sky-larks, and tit-larks, procure much of their winter subsistence; the latter bird, especially, wades up to its belly in pursuit of the pupæ of insects, and runs along upon the floating grass and weeds. They meet also with many gnats on the snow near water. Graminivorous birds, such as the ring-dove, devour the tender tops of turnips and other vegetables; and the berries of the ivy afford a considerable supply: these do not appear to be at all affected by the most intense frosts, and in this respect are far superior to the hips and haws that are frequently spoiled before the end of November. The redbreast ventures into the house,

And

And pays to trusted man
His annual visit.

Snipes, woodcocks, herons, wild-ducks, and other water-fowl, are forced from the frozen marshes, and obliged to seek their food about the rapid currents of streams that are still open. As the cold grows more intense, various kinds of sea-birds quit the bleak open shores, and come up the rivers in search of shelter and subsistence. The domestic cattle at this season require all the care and attention of the farmer. Sheep are often lost in the sudden storms, by which the snow is drifted in the hollows so as to bury them a great depth beneath it; yet in this situation they have been known to survive many days, passing the time probably in a state of sleep approaching to torpor, and thus requiring little or no food, and but a scanty supply of air; while the shelter of the surrounding snow, and the natural heat of their bodies, would keep them in a constant moderate temperature. Cows, with

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much ado, scratch up a few mouthfuls of grafs; but for their chief subsistence they must depend on the hay and other stores of the farm-yard. Early lambs and calves are kept within doors, and tended with as much care as the farmer's own children.

The plants at this season are provided by nature with a sort of winter-quarters, which secure them from the effects of cold. Those called *herbaceous*, which die down to the root every autumn, are now safely concealed underground, preparing their new shoots to burst forth when the earth is softened in spring. Shrubs and trees which are exposed to the open air, have all their soft and tender parts closely wrapt up in buds, which by their firmness resist all the power of frost; the larger kinds of buds, and those which are almost ready to expand, are further guarded by a covering of resin or gum, such as the horse-chestnut, the sycamore, and the lime. Their external covering, however, and
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the closeness of their internal texture, are of themselves by no means adequate to resist the intense cold of a winter's night: a bud *detached* from its stem, enclosed in glass, and thus protected from all access of external air, if suspended from a tree during a sharp frost, will be entirely penetrated and its parts deranged by the cold, while the buds on the same tree will not have sustained the slightest injury; we must therefore attribute to the *living principle* in vegetables as well as animals, the power of resisting cold to a very considerable degree: in animals, we know, this power is generated from the decomposition of air by means of the lungs, and disengagement of heat; how vegetables acquire this property remains for future observations to discover. If one of these buds be carefully opened, it is found to consist of young leaves rolled together, within which are even all the blossoms in miniature that are afterwards to adorn the spring. The leaves of the woodbine appear

pear just ready to expand by the end of the month: the winter aconite and bear's-foot are generally by this time in flower, and under the shelter of southern hedge-banks, the red-dead-nettle, and groundsel. The flowers of the mezereon and snow-drop seem on the point of blowing, and the catkin or male blossom of the hazel begins to unfold. At the same time also the shell-less snail makes its appearance *.

During the severity of the frost little work can be done out of doors by the farmer. As soon as it sets in, he takes the opportunity of the hardness of the ground to draw manure to his fields. He lops and cuts timber, and mends thorn-hedges.

* The shell-less snails, called slugs, are in motion all the winter in mild weather, and commit great depredations on garden plants and green wheat. The cause why these animals are so much better able to endure the cold, than shell snails, is that their bodies are protected by a covering of slime, as the whale is with blubber, which forbids the escape of their animal heat.

When

When the roads become smooth from the frozen snow, he takes his team and carries hay and corn to market, or draws coals for himself and his neighbours. The barn resounds with the flail, by the use of which the labourer is enabled to defy the cold weather. In towns the poor are pinched for fuel, and charity is peculiarly called for at this season of the year. Many trades are at a stand during the severity of the frost; rivers and canals being frozen up, watermen and bargemen are out of employment. The harbours, however, in this island are never locked up by the ice, as they are in the more northern parts of Europe, and even on the opposite coast of Holland.

The amusements of shooting, sliding, skating, and other pastimes, give life to this dreary season; but our frosts are not continued and steady enough to afford us such a share of these diversions as some other nations enjoy.

Where

Where the Rhine

Branch'd out in many a long canal extends,
From every province swarming, void of care,
Batavia rushes forth ; and as they sweep,
On sounding skates, a thousand different ways,
In circling poise, swift as the winds, along,
The *then gay* land is maddened all to joy.
Nor less the northern courts, wide o'er the
snow,

Pour a new pomp. Eager, on rapid sleds,
Their vigorous youth in bold contention
wheel

The long-resounding course. Meantime, to
raise

The manly strife, with highly blooming
charms,

Flush'd by the season, Scandinavia's dames,
Or Russia's buxom daughters glow around.

THOMSON.

The great law of *congregation* during cold weather, which affects birds and several classes of quadrupeds, exerts its influence also on man. The Greenlanders and Samoiedes retire to their large underground habitations, each of which is occupied by five or six families; and in
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the more civilized parts of the north of Europe, plays, balls, visitings, and social amusements of various kinds, contribute to raise the spirits and cheer the heart, in spite of the dead desolate scenes which nature at every step presents to our view.

F E B R U A R Y.

Now shifting gales with milder influence blow,
 Cloud o'er the skies, and melt the falling snow;
 The soften'd earth with fertile moisture teems,
 And, freed from icy bonds, down rush the
 swelling streams.

THE earlier part of this month may still be reckoned winter, though the cold generally begins to abate. The days are now sensibly lengthened, and the sun has power enough gradually to melt away the ice and snow. The hard weather generally breaks up with a sudden thaw, attended by a south wind and rain, which all at once dissolves the snow. Torrents of water then pour from the hills, every brook is swelled into a large stream, which rushes violently into the rivers; the pavement of ice with which they are covered, now breaks up in every direction with the noise of thunder, and the

D

floating

floating masses dashed against barges and bridges force down every thing that obstructs their passage ; the bed of the river becomes unable to carry off this vast accumulation of water ; it swells over the banks, inundates the bordering fields, and sweeps away cattle, mills, hay-stacks, gates, trees, and, in short, almost every thing that it reaches ; the manure is carried off from the fields, high banks with the trees upon them are undermined and give way, and in the space of a few hours incalculable losses are sustained.

Muttering, the winds at eve, with blunted
point,

Blow hollow-blustering from the south. Sub-
dued

The frost resolves into a trickling thaw. .

Spotted the mountains shine, loose flect de-
scends

And floods the country round. The rivers
swell

Of bonds impatient. Sudden from the hills,
O'er rocks and woods, in broad brown
cataraets,

A thou-

A thousand snow-fed torrents rush at once,
And where they rush, the wide resounding
plain

Is left one slimy waste.

THOMSON.

The frost, however, usually returns for a time, when fresh snow falls, often in great quantities, and thus the weather alternately changes during most part of this month.

Various signs of returning spring occur at different times in February. The wood-lark, one of our earliest and sweetest songsters, often renews his note at the very entrance of the month; not long after, rooks begin to pair, and geese to lay. The thrush and chaffinch then add to the early music of the groves; wood-owls hoot; near the close of the month partridges begin to couple, and repair the ravages committed on this devoted race during the autumn and winter. Gnats play about, insects swarm under sunny hedges, and some of the earliest of the butterfly tribe make their appearance; for though by far the greater proportion of many species of insects perish at the close

of autumn, yet several individuals, probably those that emerge the latest from the chrysalis state, are only rendered torpid by the cold; and the moderate warmth of a bright winter's day is sufficient to rouse them into activity.

As soon as the earth is softened, moles go to work in throwing up their hillocks. Under some of the largest, a little below the surface of the ground, they make their nests of moss, in which four or five young are found at a time. These animals feed on worms, beetles, and the roots of plants. They do much mischief in gardens by loosening and devouring flower-roots, and in the fields by rendering the surface of the soil unequal by their hillocks, which obstruct the scythe in mowing. They are also accused of piercing the sides of dams and canals, and letting out the water; the strong muscles of their forefeet, together with their hand-like form, admirably fit this animal for swimming; and it has lately been observed, that in this
way

way moles pass from the shore to the little islands in some of the Scotch lakes.

Many plants emerge from underground in February, but few flowers as yet adorn the fields and pastures. Snowdrops are sometimes fully opened from the beginning of the month, often peeping out amidst the snow.

Already now the snowdrop dares appear,
The first pale blossom of th' unripen'd year;
As Flora's breath by some transforming power,
Had chang'd an icicle into a flower.
Its name and hue the scentless plant retains,
And winter lingers in its icy veins.

Mrs. BARBAULD.

The elder-tree discloses its flower buds; the catkins of the hazel become very conspicuous in the hedges; young leaves are budding on the gooseberry and currant-trees about the end of the month; and those causes are now in full activity which produce the springing of plants and the renovation of vegetable life.

The first vital function in trees, after the frost is moderated and the earth suffi-

ciently thawed, is the *ascent of the sap*, which is taken up by the absorbent vessels composing the *inner bark* of the tree, and reaching to the extremity of the fibres of the roots: the water thus imbibed by the roots is there mixed with a quantity of saccharine matter and formed into sap, whence it is distributed in great abundance to every individual bud. The amazing quantity of sweet liquid sap provided for the nourishment of some trees, is evident from a prevalent custom in this country, of *tapping* the birch in the early part of spring; thus obtaining from each tree a quart or more of liquor, according to its size, which is fermented into a species of wine: the same method is also practised in the tropical regions to procure the favourite liquor of the inhabitants, *palm wine*; and a similar custom is observed in the northern parts of America with regard to the sugar-maple, the juice of which boiled down yields a rich sugar, each tree affording about three pounds.

This great accession of nourishment causes the bud to swell, to break through its covering, and to spread into blossoms, or lengthen into a shoot bearing leaves. This is the first process, and, properly speaking, is all that belongs to the *springing* or *elongation* of trees; and in many plants, that is all those which are annual or deciduous, there is no other process: the plant absorbs juices from the earth, and in proportion to the quantity of these juices increases in size; it expands its blossoms, perfects its fruit, and when the ground is incapable by drought or frost of yielding any more moisture, or when the vessels of the plant are not able to draw it up, the plant perishes. But in *trees*, though the beginning and end of the first process is exactly similar to what takes place in vegetables, yet there is a second process, which at the same time that it adds to their bulk, enables them to endure and go on increasing through a long series of years.

The second process begins soon after the first, in this way. At the base of the footstalk of each leaf a small bud is gradually formed; but the absorbent vessels of the leaf having exhausted themselves in the formation of the bud, are unable to bring it nearer to maturity: in this state it exactly resembles a seed, containing within it the rudiments of vegetation, but destitute of absorbent vessels to nourish and evolve the embryo. Being surrounded, however, by sap, like a seed in moist earth, it is in a proper situation for growing; the influence of the sun sets in motion the juices of the bud and of the seed, and the first operation in both of them is to send down roots a certain depth into the ground for the purpose of obtaining the necessary moisture. The bud accordingly shoots down its roots upon the inner bark of the tree, till they reach the part covered by the earth. Winter now arriving, the cold, and defect of moisture owing to the clogged condition of the absorbent

absorbent vessels, cause the fruit and leaves to fall, so that, except the provision of buds with roots, the remainder of the tree, like an annual plant, is entirely dead: the leaves, the flowers, and fruit, are gone, and what was the inner bark is no longer organised, while the roots of the buds form a new inner bark; and thus the buds with their roots contain all that remains alive of the whole tree. It is owing to this annual renovation of the *inner bark*, that the tree increases in bulk; and, a new coating being added every year, we are hence furnished with an easy and exact method of ascertaining the age of a tree by counting the number of concentric circles of which the trunk is composed. A tree, therefore, properly speaking, is rather a congeries of a multitude of annual plants, than a perennial individual. The sap in trees always rises as soon as the frost is abated, that when the stimulus of the warm weather in the early spring acts upon the bud, there should be at hand a

supply of food for its nourishment; and if by any means the sap is prevented from ascending at the proper time, the tree infallibly perishes. Of this a remarkable instance occurred in London, during the spring succeeding the hard winter of the year 1794. The snow and ice collecting in the streets so as to become very inconvenient, they were cleared, and many cart-loads were placed in the vacant quarters of *Moorfields*: several of these heaps of snow and frozen rubbish were piled round some of the elm-trees that grow there. At the return of spring, those of the trees that were not surrounded with the snow expanded their leaves as usual, while the others, being still girt with a large frozen mass, continued quite bare; for the fact was, the absorbents in the lower part of the stem, and the earth in which the trees stood, were still exposed to a freezing cold. In some weeks, however, the snow was thawed, but the greater number of the trees were dead, and those few that did

did produce any leaves were very sickly, and continued in a languishing state all summer, and then died.

Of all our native birds none begins to build so soon as the raven; by the latter end of this month it has generally laid its eggs and begun to sit. The following anecdote, illustrative of its attachment to its nest, is related by Mr. White in his Natural History of Selborne. “In the centre of this grove there stood an oak, which, though shapely and tall on the whole, bulged out into a large excrescence about the middle of the stem. On this a pair of ravens had fixed their residence for such a series of years that the oak was distinguished by the name of *the raven-tree*. Many were the attempts of the neighbouring youths to get at this eyry; the difficulty whetted their inclinations, and each was ambitious of surmounting the arduous task. But when they arrived at the swelling, it jutted out so much in
their

their way, and was so far beyond their grasp, that the most daring lads were awed, and acknowledged the undertaking to be too hazardous. So the ravens built on, nest upon nest, in perfect security, till the fatal day arrived in which the wood was to be levelled. It was in the month of *February*, when those birds usually sit. The saw was applied to the butt, the wedges were inserted into the opening, the woods echoed to the heavy blows of the beetle and mallet, the tree nodded to its fall, but still the dam sat on. At last, when it gave way, the bird was flung from her nest ; and though her parental affection deserved a better fate, was whipped down by the twigs, which brought her dead to the ground."

The farmer is impatient to begin his work in the fields, as soon as the ground is sufficiently thawed. He plows up his fallows, sows beans and peas, rye and spring wheat ; sets early potatoes ; drains
wet

wet lands; dresses and repairs hedges; lops trees, and plants those kinds that love a wet soil; such as poplars, alders, and willows.

M A R C H.

Winter still ling'ring on the verge of Spring,
 Retires reluctant, and from time to time
 Looks back, while at his keen and chilling
 breath,
 Fair Flora sickens.

THE principal operations of nature during this month seem to be to dry up the superabundant moisture of February, thereby preventing the roots and seeds from rotting in the wet earth, and gradually to bring on the process of vegetation in the swelling buds, though at the same time severe chilling blasts and the variableness in the weather prevent them from a full disclosure of their tender contents. This effect is beautifully touched upon in a simile of Shakespear's

“ And, like the tyrannous breathings of the
 north,

“ Checks all our buds from blowing.”

This

This seeming tyranny, however, is to be regarded as productive of very important advantages ; and those years generally prove most fruitful in which the pleasing appearances of spring are the latest ; for the more advanced the season, the less probability is there of blights and insects, which are the most formidable of all enemies to springing vegetables.

The sun has now acquired so much power, that on a clear day we often feel all the genial influence of spring, though the naked shrubs and trees give the prospect the comfortless appearance of winter. But soft pleasant weather in March is not often of long duration.

As yet the trembling year is unconfirm'd,
And winter oft at eve resumes the breeze ;
Chills the pale morn, and bids his driving
fleets
Deform the day, delightful. THOMSON.

As soon as a few dry days have made the land fit for working, the farmer goes
to

to the plow; and, if the fair weather continues, proceeds to sow barley and oats, though this business is seldom finished till the next month. The importance of a dry season for getting the seed early and favourably into the ground is expressed in the old proverb,

A bushel of March dust is worth a king's ransom.

The mellow note of the thrush, who sits perched on the naked bough of some lofty tree, is heard from the beginning of the month, and at the same time the ringdove cooes in the woods; pheasants crow; hens sit; ducks and geese lay; and the rookery is now all in motion with the pleasing labour of building and repairing nests. It is highly amusing to observe the tricks and artifices of this thievish tribe in defending or plundering the materials of their new habitations. A society with such a license of theft one would imagine
could

could not possibly subsist; and that they are sometimes obliged to interpose the public will, to control the private dispositions of individuals, is shown in the following story. There was once in a rookery a pair of birds, who, in the building time, instead of going out in search of materials, kept at home, and, watching the opportunity, plundered every unguarded nest; thus building their own habitation by contributions levied upon the industry of their neighbours. This had continued some time, and the robbers had hitherto escaped with impunity: their nest was just finished, when the rest of the society, by common consent, made an attack on the depredators, beat them soundly, demolished their nest, and expelled them ignominiously from the rookery.

These birds are accused by the farmer of doing much injury by plucking up the young corn, and other springing vegetables; though of late it seems to have be-

E

come

come a general opinion that this mischief is fully repaid by their diligence in picking up the grubs of various insects, which, if allowed to grow to maturity, would occasion much greater damage. For this purpose they are seen frequently following the plow, and darkening with their numbers the newly turned up land ; in which occupation, near the sea-coast, they are frequently joined by multitudes of gulls ; and as these birds at other times confine themselves almost wholly to the shore, it would probably be worth the farmer's while, where he has an opportunity, to encourage them in preference to the former.

Some birds that took refuge in our temperate climate from the rigour of the arctic winters, now begin to leave us, and return to the countries where they were bred ; the redwing-thrush, fieldfare, and woodcock, are of this kind, and they retire to spend their summer in Norway, Sweden, and other northern regions. The
reason

reason why these birds quit the north of Europe in winter is evidently to escape the severity of the frost; but why at the approach of spring they should return to their former haunts, is not so easily accounted for. It cannot be want of food, for if during the *winter* in this country they are able to subsist, they may fare plentifully through the rest of the year; neither can their migration be caused by an impatience of warmth, for the season when they quit this country is by no means so hot as the Lapland summers; and in fact, from a few stragglers or wounded birds annually breeding here, it is evident that there is nothing in our climate or soil which should hinder them from making this country their permanent residence, as the thrush, blackbird, and others of their congeners, actually do. The crane, the stork, and other birds which used formerly to be natives of our island, have quitted it as cultivation and population have extended; it is probable,

also, that the same reason forbids the field-fare and redwing-thrush, which are of a timorous retired disposition, to make choice of England as a place of sufficient security to breed in.

The gannets, or Soland geese, resort during this month to those Scotch isles, where they breed in such numbers as to cover almost the whole surface of the ground with their eggs and young. The Bass, an insulated rock in the Firth of Forth, is one of their most favourite haunts; of which place Dr. Harvey, in his *Exercitations on the Generation of Animals*, has given a very animated picture. The following is a literal translation of the original Latin. “There is a small island, called by the Scotch *the Bass*, not more than a mile in circumference; its surface is almost entirely covered during the months of May and June with nests, eggs, and young birds, so that it is difficult to set a foot without treading on them; while the flocks of birds flying round

round are so prodigious that they darken the air like a cloud ; and their voice and clamour is so great, that persons can scarcely hear one another speak. If from the summit of the precipice you look down on the subjacent ocean, you see it on every side covered with infinite numbers of birds of different kinds swimming and hunting their prey. If you sail round the island, and survey the impending cliffs, you behold in every fissure and recess of the craggy rocks innumerable ranks of birds of various kinds and sizes, surpassing in multitude the stars in a serene sky. If you view from a distance the flocks flying to and from the island, you may imagine them a vast swarm of bees."

Infinite wings! till all the plume-dark air,
And rude resounding shore are one wild cry.

THOMSON.

Frogs, which during winter lay in a torpid state at the bottom of ponds or ditches, are enlivened by the warmth of

spring, and early in this month rise to the surface of the water in vast numbers. They are at first very timorous, and dive to the bottom with great quickness as any one approaches; but in the coupling season they become bolder, and make themselves heard to a great distance by their croaking. A short time after their first appearance they begin to spawn, each female deposits a mass of transparent jelly-like globes with a black speck in the middle; in this last are contained the rudiments of the future tadpole, while the transparent covering serves both for the defence and food of the embryo. In a few days the round speck becomes somewhat elongated, at the same time increasing in size, till, at the end of about three weeks or a month, the little-animal breaks through its covering, and trusts itself to the shallowest and warmest part of the pond or ditch where it happened to be deposited: as the summer advances it increases in size, the fore-legs begin to shoot

shoot out, and shortly after the hind ones, the body becomes more lengthened, the tail falls off, the length of the intestines is considerably shortened, and from an *aquatic graminivorous* animal it is changed into a minute frog, *amphibious* and feeding upon *insects and other animal food*. When this last transformation is perfected, the necessity of emigration seizes upon the whole brood, the water is deserted, and they make their appearance on the land so suddenly, and in such amazing numbers, that they have been supposed to descend from the clouds. So prone have men in all ages been to have recourse to wonders, by way of saving themselves the trouble of minute investigation and the use of their senses !

The bat now makes its appearance ; and about this time also the viper uncoils itself from its winter sleep. This is the only venomous reptile that our country affords, and happily it is by no means common. They are found principally in

rocky warm thickets and in unfrequented heaths in search of their favourite food, the various species of field-mice ; very seldom intruding, as the common snake, into the gardens and hedge-banks. In some of the small uninhabited islands of the Hebrides they swarm to a great degree. The poison of these animals is secreted in a small gland under each eye, from which passes a duct terminating in a sharp perforated canine tooth, capable of being erected or depressed at pleasure. When the viper wishes to inflict a wound, it erects its canine teeth, and darting forwards, strikes them into the skin, at the same time squeezing a drop of poison through the aperture in the tooth ; the wound soon after grows very hot and painful, swells extremely, and occasionally proves fatal, or at least takes away the use of the injured part, unless a proper remedy is speedily applied. That which is in common use, and which has scarcely ever been known to fail, is *olive or fallad-*

oil; a quantity of which rubbed upon the wound, and also taken internally, is a certain remedy: on which account the viper-catchers have always a bottle of oil with them in case of need.

Those most elegant fish, smelts or sparlings, begin to run up the rivers in this month in order to spawn. They are of so tender a nature, that the least mixture of snow-water in the river drives them back again into the sea.

But nothing in the animal creation is a more pleasing spectacle than the sporting of the young lambs, most of which are yeaned this month, and are trusted abroad when the weather is tolerably mild. Dyer, in his poem of the Fleece, gives a very natural and beautiful description of this circumstance,

Spread around thy tend'rest diligence
In flow'ry spring-time, when the new dropt
 lamb,
'Tott'ring with weakness by his mother's side,
Feels the fresh world about him; and each thorn,
Hillock, or furrow, trips his feeble feet:

O guard

O guard his meek sweet innocence from all
Th' innumerable ills, that rush around his life ;
Mark the quick kite, with beak and talons
prone,

Circling the skies to snatch him from the plain ;
Observe the lurking crows ; beware the brake,
There the fly fox the careless minute waits ;
Nor trust thy neighbour's dog, nor earth, nor
sky :

Thy bosom to a thousand cares divide.

Eurus oft flings his hail ; the tardy fields
Pay not their promis'd food ; and oft the dam
O'er her weak twins with empty udder mourns,
Or fails to guard, when the bold bird of prey
Alights, and hops in many turns around,
And tires her also turning : to her aid
Be nimble, and the weakest, in thine arms,
Gently convey to the warm cote, and oft,
Between the lark's note and the nightingale's,
His hungry bleating still with tepid milk ;
In this soft office may thy children join,
And charitable habits learn in sport :
Nor yield him to himself, ere vernal airs
Sprinkle thy little croft with daisy flowers.

Another agreeable token of the arrival
of the spring is, that the bees begin to
venture out of their hives about the mid-

dle of this month : as their food is the honey-like juice found in the tubes of flowers, their coming abroad is a certain sign that flowers are now to be met with. No creature seems possessed of a greater power of foreseeing the weather, so that their appearance in a morning may be reckoned a sure token of a fair day.

Several species of bees are natives of Great Britain, some of which lay up honey, while others do not ; some of which are gregarious, or live in large societies, and others are solitary. But that species which is commonly meant by the generic term *bee*, is the one that is at present domesticated, lays up honey, and dwells in numerous communities. These little animals, in a wild state, form their nests in the hollow of some tree, or the cleft of a rock ; in which situation they were frequently seen and described by the old Greek and Latin poets. Homer, particularly in the very first simile of the Iliad, gives

gives the following animated picture of them.

As from some *rocky cleft* the shepherd fees
Clust'ring in heaps on heaps the driving bees
Rolling, and black'ning, swarms succeeding
 swarms

With deeper murmurs and more hoarse alarms;
Dusky they spread a close embodied crowd,
And o'er the vale descends the living cloud.

POPE'S HOMER.

The poet Virgil, who has appropriated a whole book in his *Georgics* to the subject of bees, has there repeated in most beautiful language as much of the polity and natural history of this insect as was known to the ancients. Since the time, however, in which he wrote, many errors have been detected, and many new circumstances have been added, by the zeal and attention of modern observers.

Early in the spring, each hive contains one queen or female, from 200 to 1000 drones or males, and from 15000 to 18000 labourers or mules; the first and
last

last kind alone have stings, the males being entirely unarmed. As soon as the plants begin to flower, the inhabitants of the hive put themselves in motion; the greater part of the labourers take wing, and disperse themselves through the neighbourhood in search of honey and wax; the former of which is a sweet limpid juice found in the nectaries of flowers, and the latter is made by the bees from the dust contained within the anthers of blossoms. These different materials are brought to the hive, and the labourers in waiting take the wax, and form of it those little hexagonal cells which serve as store houses for the honey, or nests for their young; the honey is partly distributed for present food to the inhabitants, and the remainder laid up against winter. While the labourers are thus engaged, the queen begins to deposit her eggs to the number of about 200 each day in the empty cells: the egg being soon hatched into a little white grub, increases

increases the employment of the labourers, to whom is allotted the task of feeding it with the purest honey: when it has attained its full size, the mouth of its habitation is closed up with wax, it becomes a chrysalis, and in a few days breaks through its waxen covering, being changed into a perfect bee, and instantly quits the hive in search of honey for the public store. This rapid accession, however, of inhabitants soon begins to crowd the hive, and commonly in the months of May and July large emigrations take place, called swarms, which settling in an empty hive (or in their wild state in a hollow tree or rock), in a few days lay the waxen foundations of their state, and begin collecting honey for their winter supply. Each swarm consists of a single female, 1000 or more males, and from 24,000 to 28,000 labourers. Thus they live in perfect harmony with each other, and daily adding to their numbers and stores; till, some time in the six or seven weeks between

tween the latter end of July and the beginning of September, the particular time varying in different hives, the whole state becomes all uproar and confusion, a loud angry humming is heard, accompanied by a general massacre and expulsion of the drones: every male is destroyed or turned out to perish; the young grubs that would have changed into drones participate in the ruin, and in the whole interval from September to March, only a few hundred males are allowed to arrive at maturity.

The gardens are now rendered gay by the crocuses, which adorn the borders with a rich mixture of the brightest yellow and purple. The little shrubs of mezereon are in their beauty. The fields look green with the springing grass, but few wild flowers as yet appear to decorate the ground. Daisies, however, begin to be sprinkled over the dry pastures; and the moist banks of ditches are enlivened with the glossy star-like yellow flowers of pilewort. Towards the end of the month,
primroses

primroses peep out beneath the hedges ; and the most delightfully fragrant of all flowers, the violet, discovers itself by the perfume it imparts to the surrounding air, before the eye has perceived it in its lowly bed. SHAKESPEARE compares an exquisitely sweet strain of music, to the delicious scent of this flower.

O ! it came o'er my ear, like the sweet south,
That breathes upon a bank of violets,
Stealing and giving odour.

There are several kinds of violets ; but the fragrant (both blue and white) is the earliest, thence called the *March violet*. To these flowers SHAKESPEARE adds the daffodil,

Which comes before the swallow dares, and
takes
The winds of March with beauty.

Besides the hazel, the fallow now enlivens the hedges with its catkins full of yellow dust ; and the alder-trees are covered with a kind of black bunches,
which

which are the male and female flowers. The leaves of honeysuckles are nearly expanded. In the gardens, the peach and nectarine, the almond, the cherry and apricot-trees, come into full bud during this month. The gardeners find plenty of employment in pruning trees, digging and manuring beds, and sowing a great variety of seeds, both for the flower and kitchen garden.

In the latter part of this month the *equinox* happens, when day and night are of equal length all over the globe: or rather, when the sun is an equal time above, and below, the horizon. For the morning and evening twilight make apparent day considerably longer than night. This takes place again in September. The first is called the *vernal*, the latter, the *autumnal* equinox. At these times storms and tempests are particularly frequent, whence they have always been the terror of mariners. March winds are boisterous and vehement to a proverb.

A P R I L.

Now daisies pied, and violets blue,
 And lady-smocks all silver white,
 And cuckow-buds of yellow hue,
 Do paint the meadows with delight:
 The cuckow now on every tree
 Sings cuckoo—cuckoo.

THE distinguishing characteristic of the weather during this month is fickleness; the most lovely sunshiny days are succeeded by others, which by the force of contrast often seem the most unpleasant of any in the year; the bright green of the fresh leaves, and the delightful view of newly opened flowers, is too frequently obscured by clouds and chilled by rough wintry blasts.

The most perfect image of spring, however, is exhibited in this month; no production is yet come to maturity, and the vicissitudes of warm gleams and gentle

the showers have the most powerful effect in hastening that universal springing of the vegetable tribes, whence the season derives its appellation.

April generally begins with raw unpleasant weather, the influence of the equinoctial storms in some degree still prevailing. Its opening is thus described in a poem of Mr. Warton's:

Mindful of disaster past,
And shrinking at the northern blast,
The fleet storm returning still,
The morning hoar, the evening chill;
Reluctant comes the timid Spring;
Scarce a bee, with airy ring,
Murmurs the blossom'd boughs around
That clothe the garden's southern bound;
Scarce a sickly straggling flower
Decks the rough castle's rifted tower:
Scarce the hardy primrose peeps
From the dark dell's entangled steep.

Fringing the forest's devious edge
Half rob'd appears the hawthorn hedge;
Or to the distant eye displays
Weakly green its budding sprays.

Early in the month, that welcome guest and harbinger of summer, the swallow, returns. Of this genus of birds there are four species that visit our island, all of which are known by the shortness of their legs, the extent of their wings, and the ease and swiftness of their flight, by which they escape the attacks of the kite and sparrow-hawk that commit such havock among the other small birds. The kind first seen is the chimney swallow, remarkable by its long forked tail and red breast, and by a twittering note, on account of which it might perhaps, with no great impropriety, be called a singing bird; it makes its nest in chimneys. At first, here and there, only one appears, glancing by as if scarcely able to endure the cold.

The swallow for a moment seen,
Skims in haste the village green.

But in a few days their number is greatly increased, and they sport with much seeming

ing

ing pleasure in the warm sunshine. The second in the order of arrival is the house martin, which constructs its nest of clay under the eaves of houses and in the corners of windows : this is the most numerous species, and is known by its white breast and black back. The next species is the sand-martin ; this is the smallest of the genus, being called in Spain *mountain butterflies* : their favourite residence is in a steep sandbank above a large pool or river, in which they scoop out holes to the depth of about two feet, and in this secure retreat deposit their eggs. The largest species, and that which arrives the latest, is the swift, known by its lofty and remarkably rapid flight : these are seen in fine mornings sporting about and displaying their various evolutions at a vast height in the air ; and in the evening the males collect together in parties of ten or a dozen, approach nearer the ground, and hurry round the tops of large buildings, uttering at the same time a piercing

iscream by way of serenade to their mates, who make their nests under the tiles of houses.

As these birds live on insects, their appearance is a certain proof that many of this minute class of animals are now got abroad from their winter retreats.

Another pleasing occurrence in this month is the pairing of birds, their assiduity in building nests, and the various melody with which the groves are filled.

Every copse
Deep-tangled, tree irregular, and bush
Bending with dewy moisture, o'er the heads
Of the coy quirksters that lodge within,
Are prodigal of harmony. THOMSON.

The nightingale, that most enchanting of songsters, is heard soon after the arrival of the swallow.

First heard before the shallow cuckoo's bill.
MILTON.

He sings by day as well as by night, but in the day-time his voice is drowned in
the

the multitude of performers ; on which account the poets have always made the song of the nightingale a nocturnal serenade.

Sweet bird, that shun'st the noise of folly,
Most musical most melancholy !

Thee, chauntress, oft, the woods among
I woo to hear thy even song. MILTON.

The singing of birds is usually supposed to be the language of courtship : “ all this waste of music is the voice of love,” says Thomson : but though for the most part it is coincident with the pairing and hatching of birds, yet there are several circumstances which show it to be rather the effect of a particular state of the body, depending considerably on the weather, and in a great measure instinctive, that is, *involuntary*, than the consequence of the sentiment of love or desire. If a bird be made prematurely to moult, he will be in song while the rest are out of song. A solitary nightingale, or any other bird

kept in a cage, will not only sing in that situation, but will continue his note several weeks longer than one that is in a state of nature, as well as being much earlier: and several birds even when at liberty, as the redbreast, blackbird, and thrush, recommence their song in autumn, as the woodbine and some other plants blossom again at that time of the year; the scent indeed of the flowers is fainter, in this respect corresponding with the birds just mentioned, whose notes are less sprightly, and with longer intervals of silence, than in spring. The reason of the vernal singing of birds being superior to the autumnal, is probably owing to greater vigour of body at one time than the other. During the winter, if birds have but little to eat, yet they have nothing to do except providing themselves with food; and the increased stimulus of the weather in spring, together with the plenty of *animal* food that they then feed upon, such as worms, grubs of insects, &c.

gives

gives them strength and spirits for singing and propagating. But in autumn the case is widely different; the weather itself indeed may be as favourable to encourage the singing of birds as in the spring, though perhaps the languor and decrease of strength may be greater from the summer heats, than the severity of winter; the fatigue, however, of bringing up a brood of young, the illness during the moulting season, and the change in food, from worms to *seeds* and other *vegetable* productions, afford a sufficient and obvious reason why the singing of birds should be only partially renewed in autumn.

In April ducks and geese hatch. The young ones are covered with a yellow down, and take to the water instantly on leaving the shell, where they afford a pleasing sight as they sail under convoy of their dams.

Another of the most striking events of this month is the renewal of the cuckoo's note, which is generally heard about

the middle of April. The simple monotonous call, whence its name is derived, has commanded attention in all countries; and several rustic sayings, and the names of several plants which flower at this time, are derived from it; as the *cuckoo-flower*, or ladysmock, the *cuckoo-pint*, or arum: and in Attica, the arrival of this bird being at the time when the fruit of the fig-tree (for which the territory of Athens was celebrated) made its appearance, the cuckoo and a young fig were called by the same name, (κοκκυξ) coccux.

Hail beauteous stranger of the wood,

Attendant on the Spring!

Now heaven repairs thy rural seat,

And woods thy welcome sing.

Soon as the daisy decks the green,

Thy certain voice we hear:

Hast thou a star to guide thy path,

Or mark the rolling year?

Delightful visitant! with thee

I hail the time of flowers,

When heaven is filled with music sweet

Of birds among the bowers.

The schoolboy, wand'ring in the wood
To pull the flowers so gay,
Starts, thy curious voice to hear,
And imitates thy lay. LOGAN.

It is upon this coincidence between the arrival of birds and the flowering of plants that *natural calendars* have been attempted to be constructed. It would indeed be returning to the earliest ages of ignorance and barbarism were we to make use of such a calendar, however perfect in its kind, in civil transactions, as we are in possession of unvarying modes of calculating the lapse of time by the assistance of astronomy; but the very circumstance that unfits a *natural calendar* for civil use, renders it of considerable importance to the farmer and gardener, whose business is so materially affected by the irregular vicissitudes of the seasons. For example, the time of sheep-shearing, it is evident, cannot be fixed to any particular week, much less to any certain day; for this operation cannot be performed safely, till
warm

warm weather is thoroughly established; it would be absurd, therefore, to fix the second week in June for this business, since the latter end of May in very favourable years, and the close of June in unfavourable ones, might, according to circumstances, be the most proper time: a certain degree of warmth is necessary to the blossoming of the elder-tree, and as the season is early or late, so will be the time of this plant's flowering; and as an equal degree of heat is requisite before sheep ought to be sheared, according to the season of elder-blossoms will vary the time of sheep-shearing.

The cuckoo's arrival is regularly preceded some days by that of the wry-neck, a small bird singular in its attitudes and plumage, and living on ants and insects that harbour in the bark of trees, which it extracts by means of its long tongue, furnished with a sharp bony tip. This bird has also a peculiar note or cry, easily distinguished by those who have once heard it.

The

The other summer birds of passage that arrive during this month usually make their appearance in the following order: the ring-ouzel, red-start, yellow-wren, swift, whitethroat, grasshopper-lark, and willow-wren. Various kinds of insects are seen about this time, of which the most remarkable is the *gryllus gryllotalpa*, or *mole-cricket*. This singular animal is distinguished by its low, dull, jarring note, continued for a long time without intermission like the chattering of the fern-owl; but still more so by the peculiar structure of its fore-feet, which are exceedingly strong, and greatly resemble those of the mole, whence this insect derives its name. Anatomists also have discovered so great a conformity between its internal structure, and that of the ruminating quadrupeds, as renders it highly probable that this animal, like them, *chews the cud*.

The mole-cricket inhabits the sides of canals and swampy wet soils, in which,
just

just below the surface, it forms long winding burrows, and a chamber neatly smoothed and rounded of the size of a moderate snuff-box, in which, about the middle of May, it deposits its eggs to the number of nearly an hundred. The ridges, which they raise in their subterraneous progress, interrupt the evenness of gravel walks, and the havock they commit in beds of young cabbages, legumes, and flowers, renders them very unwelcome guests in a garden.

Several species of that elegant tribe of insects the *libellula*, or dragon-fly, about this time emerge from the water, in which they pass their *aurelia* state.

The *formica herculanica*, or horse-ant, in the beginning of this month recommences its annual labours; this species is about three times the size of the common black ant, and inhabits the pine forests of Scotland, and the rocky woods of England and Wales, in which it erects a large conical nest, two feet or more in height,

height, composed of leaves and small twigs.

The snake too, the large bat, and shell-snails, quit their winter retirements at this period; and on mild evenings earth-worms come out of their holes in search of food, or for the purpose of propagation.

Fish, actuated by the same law that exerts its influence upon the rest of nature, now leave the deep holes and sheltered bottoms, where they passed the winter, and wandering about in search of food, again offer themselves to the angler.

Beneath a willow long forlook,
The fisher seeks his custom'd nook;
And bursting thro' the crackling sedge
That crowns the current's cavern'd edge,
He startles from the bordering wood
The bashful wild-duck's early brood.

WARTON.

Many trees come into blossom during this month, and form a most agreeable spectacle, as well on account of their beauty, as the promise which they give
of

of future benefits. The blackthorn or sloe leads the way, and is succeeded by the apricot, peach, nectarine, cherry, and plum: but though

Hope waits upon the flowery prime,
yet it is an anxious time for the possessor,
as the fairest prospect of a plentiful increase is often blighted by the frequent returns of frosty winds.

Abortive as the first-born bloom of spring
Nipp'd by the lagging rear of winter's frost.

MILTON.

Cowper describes the same circumstance in the following lines:

Spring is but the child
Of churlish Winter, in her froward moods
Discovering much the temper of her fire.
For oft, as if in her the stream of mild
Maternal nature had revers'd its course,
She brings her infants forth with many smiles,
But once deliver'd, kills them with a frown.

TASK III.

Those of the earlier plants that now
most strike the eye, are the primrose
and

and woodforrel under hedges; the wood anemone in dry woods and thickets; the wood crowfoot and marsh marygold in wet marshy places; and the ladysmock or cuckoo-flower in meadows.

The farmer is still busied in sowing different sorts of grain and feeds for fodder, for which purpose dry weather is yet suitable; though plentiful showers at due intervals are desirable for feeding the young grafs and springing corn.

M A Y.

Born in yon blaze of orient sky,
 Sweet May! thy radiant form unfold;
 Unclose thy blue voluptuous eye,
 And wave thy shadowy locks of gold.
 For thee the fragrant zephyrs blow,
 For thee descends the sunny shower;
 'The rills in softer murmurs flow,'
 And brighter blossoms gem the bower.
 Light Graces dress'd in flowery wreaths,
 And tiptoe joys their hands combine;
 And Love his sweet contagion breaths,
 And laughing dances round thy shrine.
 Warm with new life, the glittering throngs,
 On quivering fin and rustling wing,
 Delighted join their votive songs,
 And hail thee goddess of the spring.

DARWIN.

MAY has ever been the favourite
 month in the year for poetical descrip-
 tion, but the praises originally lavished
 upon it were uttered in climates more
 southern

southern than our own. In such it really unites all the soft beauties of spring with the radiance of summer, and possesses warmth enough to cheer and invigorate, without overpowering. With us, especially since we have reckoned by the new style, great part of the month is yet too chill for a perfect enjoyment of the charms of nature, and frequent injury is sustained by the flowers and young fruits during its course, from blights and blasting winds. May-day, though still observed as a rural festival, has often little pleasure to bestow except that arising from the name, while the scanty garlands composed in honour of the day, rather display the immature infancy than the luxuriant youth of the year. In a very elegant poem, entitled, *The Tears of Old May Day*, this newer rival is thus described :

Nor wonder, man, that Nature's bashful face,
And opening charms her rude embraces fear :
Is she not sprung of April's wayward race,
The sickly daughter of th' unripen'd year ?

With show'rs and sunshine in her fickle eyes,
With hollow smiles proclaiming treach'rous
 peace ;
With blushes, harb'ring in their thin disguise,
The blast that riots on the Spring's increase.

The latter part of the month, however, on the whole, is even in this country sufficiently profuse of beauties. The earth is covered with the freshest green of the grass and young corn, and adorned with numerous flowers opening on every side. The trees put on all their verdure ; the hedges are rich in fragrance from the snowy blossoms of the hawthorn ; and the orchards display their highest beauty in the delicate bloom of the apple blossoms.

One boundless blush, one white-empurpled
 shower
Of mingled blossoms. THOMSON.

All these promising signs of future plenty are, however, liable to be cut off by the blights which peculiarly occur in this month, and frequently commit most dreadful ravages. The history and cause
of

of blights is by no means exactly ascertained, and it is a subject which, from its actual importance, well deserves a minute investigation. There appear to be three kinds of blights: the first occurs in the early spring, about the time of the blossoming of the peach, and is nothing more than a *dry frosty wind* usually from the north or north-east, and principally affects the *blossoms*, causing them to fall off prematurely, and consequently to become unproductive. The two other kinds of blights occur in this month, affecting principally the apple and pear-trees, and sometimes the corn. One of these consists in the appearance of an immense multitude of *aphides*, a kind of small insect of a brown, or black, or green colour, attacking the *leaves* of plants, and entirely encrusting the young stems. These pests are, I believe, always found to make their appearance after a north-east wind; and it has been supposed by many that they are actually conveyed hither by the wind.

For oft, engend' red by the hazy north,
Myriads on myriads, infect armies warp
Keen in the poison'd breeze; and wasteful eat
Thro' buds and bark, into the blacken'd core
Their eager way. THOMSON.

Many circumstances indeed favour this opinion, as the suddenness with which they appear, being generally in the course of a single night; and those trees that are sheltered from the wind being uninfected: indeed it frequently happens that a single branch that chances to be screened will escape unhurt, while the rest of the tree is quite covered with these minute destroyers. A third reason may be derived from the inactivity of these insects: they generally remain almost immovable on the branch or leaf where they are first seen, and are for the most part unprovided with wings; yet the places where they are commonly found are those parts of a tree which are furthest from the ground, and most exposed to the wind. The last kind of blight is preceded by a

south or south-west wind, unaccompanied by insects; the effects of which are visible in the burnt appearance of all leaves and shoots that are exposed to that quarter; it attacks all vegetables indiscriminately, but those suffer most from it which are the loftiest, and whose leaves are the youngest; the oak therefore is peculiarly injured.

A cold and windy May is, however, accounted favourable to the corn; which, if brought forward by early warm weather, is apt to run into stalk, while its ears remain thin and light.

The leafing of trees is commonly completed in this month. It begins with the aquatic kinds, such as the willow, poplar, and alder, proceeds to the lime, sycamore, and horsechestnut, and concludes with the oak, beech, ash, walnut, and mulberry; these last, however, are seldom in full leaf till June.

No tree in all the grove but has its charms,
Tho' each its hue peculiar; paler some

And of a wannish grey ; the willow such
 And poplar, that with silver lines his leaf,
 And ash, far stretching his umbrageous arm.
 Of deeper green the elm ; and deeper still,
 Lord of the woods, the long surviving oak.
 Some glossy-leav'd and shining in the sun,
 The maple, and the beech of oily nuts
 Prolific, and the lime at dewy eve
 Diffusing odours : nor unnoted pass
 The sycamore, capricious in attire,
 Now green, now tawny, and ere autumn yet
 Have chang'd the woods, in scarlet honours
 bright. COWPER'S TASK.

Among the numerous wild-flowers,
 none attracts more notice than the cow-
 slip,

Whose bashful flowers
 Declining, hide their beauty from the sun,
 Nor give their spotted bosoms to the gaze
 Of hasty passenger.

On hedge-banks the wild germander of
 a fine azure blue is conspicuous, and the
 whole surface of meadows is often co-
 vered by the yellow crowfoot. These
 flowers, also called buttercups, are ér-
 roneously supposed to communicate to
 the

the butter at this season its rich yellow tinge, as the cows will not touch it on account of its acrid biting quality; this is strikingly visible in pastures, where, though all the grass is cropt to the very roots, the numerous tufts of this weed spring up, flower, and shed their seeds in perfect security, and the most absolute freedom from molestation by the cattle; they are indeed cut down and made into hay together with the rest of that rubbish that usually occupies a large proportion of every meadow; and in this state are eaten by cattle, partly because they are incapable of separating them, and partly because by drying their acrimony is considerably subdued; but there can be no doubt of their place being much better supplied by any sort of real grass. In the present age of agricultural improvement the subject of grass lands among others has been a good deal attended to, but much yet remains to be done, and the tracts of the ingenious Stillingfleet,

and of Mr. Curtis, on this important division of rural oeconomy, are well deserving the notice of every liberal farmer. The excellence of a meadow consists in its producing as much herbage as possible, and that this herbage should be agreeable and nutritious to the animals which are fed with its crop. Every plant of crowfoot therefore ought, if practicable, to be extirpated, for, so far from being grateful and nourishing to any kind of cattle, it is notorious, that in its fresh state nothing will touch it. The same may be said of the hemlock, kex, and other umbelliferous plants which are common in most fields, and which have entirely overrun others; for, these when fresh are not only noxious to the animals that are fed upon hay, but from their rank and straggling manner of growth, occupy a very large proportion of the ground. Many other plants that are commonly found in meadows may upon the same principles be objected to, and though the present generation of farmers
has

has done much, yet still more remains for their successors to perform.

The gardens now yield an agreeable though immature product in the young gooseberries and currants, which are highly acceptable to our tables, now almost exhausted of their store of preserved fruits.

Early in the month the latest species of the summer birds of passage arrive, generally in the following order: fern-owl or goat-sucker, fly-catcher, and sedge-bird.

This is also the principal time in which birds hatch and rear their young. The assiduity and patience of the female during the task of sitting is admirable, as well as the conjugal affection of the male, who sings to his mate, and often supplies her place; and nothing can exceed the parental tenderness of both when the young are brought to light.

Several species of insects are this month added to those which have already been
enume-

enumerated; the chief of which are the great white cabbage butterfly (*papilio brassicæ*), the may-chaffer, the favourite food of the fern-owl; the horse fly, or forest fly, so great a plague to horses and cattle, and several kinds of moths and butterflies.

Towards the end of May the bee-hives send forth their earlier swarms. These colonies consist of the young progeny and and some old ones, now grown too numerous to remain in their present habitation, and sufficiently strong and vigorous to provide for themselves. One queen bee is necessary to form each colony; and wherever she flies they follow. Nature directs them to march in a body in quest of a new settlement, which, if left to their choice, would generally be some hollow trunk of a tree. But man, who converts the labours and instincts of so many animals to his own use, provides them with a dwelling and repays himself with their honey. The early swarms are generally
the

the most valuable, as they have time enough to lay in a plentiful store of honey for their subsistence through the winter.

About the same time the glow-worm shines. Of this species of insects the females are without wings and luminous, the males are furnished with wings, but are not luminous; it is probable therefore that this light may serve to direct the male to the haunts of the female, as Hero of Sestos is said to have displayed a torch from the top of a high tower to guide her venturous lover Leander in his dangerous passage across the Hellespont.

7 You (i. e. the Sylphs)

Warm on her mossy couch the radiant worm,
Guard from cold dews her love illumined form,
From leaf to leaf conduct the virgin light,
Star of the earth, and diamond of the night.

DARWIN.

These little animals are found to extinguish their lamps between eleven and twelve at night.

Old May-day is the usual time for
turning

turning out cattle into the pastures, though frequently then very bare of grafs. The milk soon becomes more copious, and of finer quality, from the juices of the young grafs; and it is in this month that the making of cheefe is usually begun in the dairies. Cheshire, Wiltshire, and the low parts of Gloucestershire, are the tracts in England most celebrated for the best cheefe.

Many trees and shrubs flower in May, such as the oak, beech, maple, sycamore, barberry, laburnum, horse-chestnut, lilac, mountain ash, and Guelder rose; of the more humble plants the most remarkable are the lily of the valley, and woodroose in woods, the male orchis in meadows, and the lychnis, or cuckoo flower, on hedge-banks.

This month is not a very busy season for the farmer. Some sowing remains to be done in late years; and in forward ones, the weeds, which spring up abundantly in fields and gardens, require to be kept

kept under. The husbandman now looks forwards with anxious hope to the reward of his industry.

Be gracious, Heaven! for now laborious man
Has done his part. Ye fostering breezes, blow!
Ye softening dews, ye tender showers, descend!
And temper all, thou world-reviving fun,
Into the perfect year! THOMSON.

J U N E.

Now genial suns and gentle breezes reign,
And Summer's fairest splendours deck the plain;
Exulting Flora views her new-born rose,
And all the ground with short-lived beauty
glows.

JUNE is really in this climate what the poets represent May to be, the most lovely month in the year. Summer is commenced, and warm weather thoroughly established; yet the heats rarely arise to excess, or interrupt the enjoyment of those pleasures which the scenes of nature at this time afford. The trees are in their fullest dress, and a profusion of the gayest flowers is every where scattered around, which put on all their beauty just before they are cut down by the scythe, or withered by the heat.

Soft copious showers are extremely welcome towards the beginning of this month,

month, to forward the growth of the young herbage. Such a one is thus described by Thomson.

Gradual sinks the breeze
 Into a perfect calm : that not a breath
 Is heard to quiver through the closing woods,
 Or rustling turn the many-twinkling leaves
 Of aspen tall.

At last

The clouds consign their treasures to the fields ;
 And, softly shaking on the dimpled pool
 Prelusive drops, let all their moisture flow,
 In large effusion, o'er the freshened world.
 The stealing shower is scarce to patter heard,
 By such as wander through the forest walks,
 Beneath th' umbrageous multitude of leaves.
 But who can hold the shade, while Heaven descends

In universal bounty, shedding herbs,
 And fruits, and flowers, on Nature's ample lap ?

One of the earliest rural employments of this month is the shearing of sheep ; a business of much importance in various parts of this kingdom, where wool being the basis of the principal manufactures, is one of the most valuable products that the country affords. England has been

for many ages famous for its breeds of sheep, which yield wool of various qualities, suited to different branches of the manufacture. The downs of Dorsetshire and other southern and western counties feed sheep, whose fine short fleeces are employed in making the best broad cloths. The coarser wool of Yorkshire and the northern counties is used in the narrow cloths. The large Leicestershire and Lincolnshire sheep are clothed with long thick flakes, proper for the hosier's use; and every other kind is applied to some valuable purpose.

The season for sheep-shearing commences as soon as the warm weather is so far settled that the sheep may without danger lay aside great part of their clothing. The following tokens are laid down by Dyer in his Fleece to mark out the proper time.

If verdant elder spreads
Her silver flowers; if humble daisies yield
To yellow crowfoot and luxuriant grass,
Gay shearing-time approaches.

Before

Before shearing the sheep undergo the operation of washing, in order to free the wool from the foulness which it has contracted.

————— On the bank

Of a clear river, gently drive the flock,
And plunge them one by one into the flood :
Plung'd in the flood, not long the struggler sinks.
With his white flakes, that glisten thro' the tides ;
The sturdy rustic, in the middle wave,
Awaits to seize him rising ; one arm bears
His lifted head above the limpid stream
While the full clammy fleece the other laves
Around, laborious, with repeated toil ;
And then resigns him to the sunny bank,
Where, bleating loud, he shakes his dripping
locks. DYER.

The shearing itself is conducted with a degree of ceremony and rural dignity, being a festival, as well as a piece of labour.

At last, of snowy white, the gathered flocks
Are in the wattled pen innumerable press'd,
Head above head : and, rang'd in lusty rows
The shepherds sit, and whet the founding shears.
The housewife waits to roll her fleecy stores,
With all her gay-drest maids attending round.

One, chief, in gracious dignity enthron'd,
Shines o'er the rest, the pastoral queen, and rays
Her smiles, sweet-beaming, on her shepherd-
king.

A simple scene! yet hence BRITANNIA sees
Her solid grandeur rise: hence she commands
Th' exalted stores of every brighter clime,
The treasures of the sun without his rage.

THOMSON.

A profusion of fragrance now arises
from the fields of clover in blossom. Of
this plant there are the varieties of white
and purple; the latter of which is some-
times called honeysuckle, from the quan-
tity of sweet juice contained in the tube
of the flower, whence the bees extract
much honey. A still more exquisite
odour proceeds from the beans in blossom,
of which Thomson speaks in this rap-
turous language:

Long let us walk

Where the breeze blows from yon extended field
Of blossom'd beans. Arabia cannot boast
A fuller gale of joy, than liberal, thence
Breathes thro' the sense, and takes the ravish'd
soul.

Beans

Beans and peas, which now adorn the fields with their purple flowers, belong to a large natural family of plants called the *papilionaceus*, or butterfly-shaped-blossomed, and also *leguminous* from the pods which they bear. Most of these in our climate afford food for man or beast: of some the seeds alone are used, as of pea and bean; of others the entire pod, as of French or kidney-bean; and of some the whole plant, as of clover, lucern, and vetch.

Our hedges are now beginning to be in their highest beauty and fragrance. The place of the hawthorn is supplied by the flowers of the *hip* or *dog-rose*, the different hues of which, from a light blush to a deep crimson, form a most elegant variety of colour. The *bittersweet nightshade* with its fine purple petals, and bright orange stamina, merits the second rank in beauty to the rose. The *woodbine* or *honeysuckle* is unequalled in fragrance, and as an ornamental plant, almost rivals

the nightshade ; while the graceful climbing shoots of the *white bryony* and tufted vetch connect by light festoons the other vegetable beauties that grace peculiarly the hedges of this country.

The several kinds of corn come into ear and flower during this month, as well as most of the numerous species of grass, which indeed are all so many lesser kinds of corn ; or rather corn is only a larger sort of grass. It is peculiar to all this kind of plants to have long slender pointed leaves, a jointed stalk, and a flowering head, either in the form of a close spike like wheat, or a loose bunch called a panicle, like oats. This head consists of numerous husky flowers, each of which bears a single seed. The bamboo, sugarcane, and reed, are the largest of this natural family.

Those kinds whose seeds are big enough to be worth the labour of separating, are usually termed *corn*, and form the chief article of food of almost all the nations of
the

the world, for very few are so little civilized as not to raise it. In Europe the principal kinds of corn are wheat, rye, barley, and oats. In Asia the chief dependence is placed on rice; in Africa and America on maize or Indian corn.

The smaller kinds, called grasses, are most valuable for their leaves, and stalks or herbage, which make the principal food of domestic cattle. This cut down and dried is *hay*, the winter provision of cattle in all the temperate and northern regions. Grass is most fit to cut after it is in ear, but before its seeds are ripened. If it be suffered to grow too long, it will lose its juices and become like the straw of corn. The latter part of June is the beginning of hay-harvest for the southern and middle parts of the kingdom. This is one of the busiest and most agreeable of rural occupations; both sexes, and all ages, are engaged in it; the fragrance of the new mown grass, the gaiety of all surrounding objects, and the genial

warmth of the weather, all conspire to render it a season of delight and pleasure to the beholder.

Now swarms the village o'er the jovial mead ;
The rustic youth brown with meridian toil,
Healthful and strong ; full as the summer rose
Blown by prevailing suns, the village maid,
Half naked, swelling on the sight, and all
Her kindled graces burning o'er her cheek.
Even stooping age is here ; and infant hands
Trail the long rake, or, with the fragrant load
O'ercharg'd, amid the kind oppression roll.
Wide flies the tedded grain ; all in a row
Advancing broad, or wheeling round the field,
They spread the breathing harvest to the sun :
Or as they rake the green-appearing ground,
And drive the dusky wave along the mead,
The russet hay-cock rises thick behind,
In order gay.

THOMSON.

The increasing warmth of the year calls forth fresh species of insects. Of those which appear during this month, the chief are the grasshopper ; brash or green beetle ; various kinds of flies ; ephemera or angler's may-fly ; cicada spumaria, cuckoo-pit insect, or frog-hopper ; stag-horn beetle,

tle, one of the largest of this class; and the formidable gadfly, a single one of which strikes terror into the largest herd of cattle, for it is in the skin of the back of these animals that this insect deposits its eggs.

The principal season for taking that delicate fish, the mackerel, is in this month.

About this time also birds cease their notes; for after the end of June an attentive observer heard no birds except the stone curlew (thick-kneed plover of Pennant) whistling late at night; the yellow-hammer, goldfinch, and golden-crested wren, now and then chirping. The cuckoo's note also ceases about this time.

The groves, the fields, the meadows, now no more
With melody resound. 'Tis silence all,
As if the lovely songsters, overwhelm'd
By bounteous Nature's plenty, lay intranc'd
In drowsy lethargy.

Some of the most observable plants in flower are the vine; the wood-spurge, and wood-pimpernel, the one in dry, the other in
in

in moist thickets; buckbean, water iris, and willow-herbs, in marshes; meadow cranesbill, vipers-bugloss, and corn-poppy, in fields; mullein, foxglove, thistles, and mallow, by road-sides and in ditch-banks; and that singular plant the *bee-orchis*, in chalky or limestone soils.

Gooseberries, currants, and strawberries, begin to ripen in this month, and prove extremely refreshing as the parching heats advance. About an hour before sunset, in the mild evenings of this month, it is highly amusing to watch the common white or barn owl in search of its prey, which consists almost wholly of field-mice. The large quantity of soft plumage with which this bird is covered, enables it to glance easily, and without noise, through the air. Its manner of hunting is very regular, first beating up the side of a hedge, then taking a few turns over the meadow, and finishing by the opposite hedge, every now and then dropping among the grass in order to seize

seize its food. It has been found by careful observation, that when a pair of owls have young, a mouse is brought to the nest about once in every five minutes.

Another interesting nocturnal bird is the goat-sucker, or fern-owl, nearly allied to the *swallow* genus in its form, its mode of flight, and food: it is by no means common, but may be occasionally observed hawking among the branches of large oaks in pursuit of the scarabeus solstitialis, or fern chaffer, which is its favourite food.

The balmy evenings, about the middle of this month, offer yet another interesting object to the naturalist; this is the angler's may-fly (*ephemera vulgata*), the most short-lived in its perfect state of any of the insect race; it emerges from the water, where it passes its aurelia state, about six in the evening, and dies about eleven at night. They usually begin to appear about the fourth of June, and continue in succession nearly a fortnight.

On

On the twenty-first of June happens the *summer-solstice*, or longest day : at this time in the most northern parts of the island there is scarcely any night, the twilight continuing almost from the setting to the rising of the sun ; so that it is light enough at midnight to see to read. This season is also properly called *Midsummer*, though, indeed, the greatest heats are not yet arrived, and there is more warm weather after it than before.

J U L Y.

Deep to the root
 Of vegetation parch'd, the cleaving fields
 And slipp'ry lawn an arid hue disclose ;
 Echo no more returns the cheerful sound
 Of sharp'ning scythe ; the mower sinking heaps
 O'er him the humid hay, with flowers perfum'd.

As January is the coldest, so July is the hottest month of the year. For though the direct influence of the sun is continually diminishing after the summer solstice, yet the earth and air have been so thoroughly heated, that the warmth which they retain, more than compensates for a time the diminution of the solar rays. The effects of this increased temperature soon become very striking. The flowers of the former month quickly mature their seeds, shrivel and fall ; at the same time their leaves and stalks lose their verdure, and the whole plant hastens to decay. A new generation advances to supply their
 4 place,

place, of plants which require the full influence of our summer suns to bring them to perfection, and which flourish most luxuriantly in situations and seasons when the warmth is most abundant: these are, particularly, many of the umbelliferous, as wild carrot and hemlock; the aromatic, as wild thyme; the succulent, or thickeaved, as the whole race of sedums and cotyledons; the aquatic and marsh plants, as bulrush, waterlily, marsh St. John's wort, fundew, and Lancashire asphodel; and the compound flowered, as thistle, fowthistle, hawkweed, bluebottle (*centaurea cyanus*), marygold, goldenrod, camomile, and sunflower.

The animal creation seem oppressed with languor during this hot season, and either seek the recesses of woods, or resort to pools and streams to cool their bodies and quench their thirst.

On the grassy bank
Some ruminating lie; while others stand
Half in the flood, and often bending sip
The circling surface. In the middle droops
The

The strong laborious ox, of honest front,
Which incompas'd he shakes; and from his sides
The troublous insects lashes with his tail,
Returning still.

THOMSON.

The insect tribe, however, are peculiarly active and vigorous in the hottest weather. These minute creatures are for the most part annual, being hatched in the spring and dying at the approach of winter. They have, therefore, no time to lose in indolence, but must make the most of their short existence; especially as their most perfect state bears only a small proportion to the rest of their lives. All insects that live upon, or in the ground, undergo three changes, in each of which they are transformed to a totally different appearance. From the egg they first turn into *caterpillars* or *maggots*, when they crawl upon many feet, and are extremely voracious, several kinds of them doing much mischief in gardens, stripping the trees of their leaves, and sometimes devouring

devouring the herbage on the ground. This is their state in the spring. They next become *aurelias*, or *chrysalises*, resembling an infant closely wrapt in swaddling clothes, being motionless, requiring no nourishment, and indeed having scarcely any appearance of life. From this state they burst forth into the *perfect insect*, shining in all its colours, furnished with wings, endowed with surprising activity, capable of propagating its species, and feeding for the most part on thin animal juices, or the honey of flowers. In this state they continue but a short time. The male impregnates the female, she lays her eggs, and they both die. Those insects that have passed all their former life in water, as gnats, ephemeræ, &c. no sooner undergo the last transformation than they become incapable of continuing in the water even for a few seconds.

Wak'd by his warmer ray, the reptile young
Come wing'd abroad; by the light air upborn,
Lighter,

Lighter, and full of soul. From every chink,
And secret corner, where they slept away
The wintry storms ; or rising from their tombs,
To higher life ; by myriads, forth at once,
Swarming they pour ; of all the varied hues
Their beauty-beaming parent can disclose.
Ten thousand forms ! ten thousand different
tribes !

People the blaze. To sunny waters some
By fatal instinct fly ; where on the pool
They, sportive, wheel ; or, sailing down the
stream,

Are snatch'd immediate by the quick ey'd trout,
Or darting salmon. Thro' the green wood glade
Some love to stray ; there lodg'd, amus'd and fed,
In the fresh leaf. Luxurious, others make
The meads their choice, and visit every flower,
And every latent herb : for the sweet task,
To propagate their kinds, and where to wrap,
In what soft beds, their young yet undisclos'd,
Employs their tender care. Some to the house,
The fold, and dairy, hungry, bend their flight ;
Sip round the pail, or taste the curdling cheese.

THOMSON.

The luxury of cooling shades is now
peculiarly grateful ; and, indeed, is scarcely
desired in this climate longer than a few
weeks at the height of summer.

Welcome, ye shades ! ye bowery thickets, hail !
Ye lofty pines ! ye venerable oaks !
Ye ashes wild, resounding o'er the steep !
Delicious is your shelter to the soul,
As to the hunted hart the fallying spring.

THOMSON.

Bathing, too, is a delightful amusement at this season ; and happy is the swimmer, who alone is able to enjoy the full pleasure of this healthful exercise. The power of habit to improve the natural faculties, is in nothing more apparent than in the art of swimming. Man, without practice, is utterly unable to support himself in the water. In these northern countries, the season for pleasant bathing being short, few in proportion can swim at all ; and to those who have acquired the art, it is a laborious and fatiguing exercise. Whereas, in the tropical countries, where from their very infancy both sexes are continually plunging into the water, they become a sort of amphibious creatures, swimming and diving with the utmost ease,

ease, and for hours together, without intermission.

The excessive heats of this period of the year cause such an evaporation from the surface of the earth and waters, that after some continuance of dry weather, large heavy clouds are formed, which, at length, let fall their collected liquor in extremely copious showers, which frequently beat down the full-grown corn, and sometimes deluge the country with sudden floods. Thunder and lightning generally accompany these summer storms. Lightning is a collection of electric fire drawn from the heated air and earth, and accumulated in the clouds, which, at length overcharged, suddenly let go their contents in the form of broad flashes or fiery darts. These are attracted again by the earth, and often intercepted by buildings, trees, and other elevated objects, which are shattered by the shock. Thunder is the noise occasioned by the explosion, and therefore always *follows* the lightning;

I 2

lightning ; the sound travelling slower to our ears, than the light to our eyes. Just the same thing happens when a gun is fired at a distance. When we hear the thunder, therefore, all danger from that flash of lightning is over ; and thunder, though so awful and tremendous to the ear, is, of itself, entirely harmless.

The plants which flower this month, beside those already mentioned, are the potatoe and hop ; the meadow-sweet and graspoly (*lythrum salicaria*) by the side of streams and ponds ; the pimpernel, cockle, and fumitory in corn fields ; the delicate blue *campanula* in wastes or by road sides ; and the nasturtium, jasmine, and white lily in gardens. The pure white flowers of the latter, elevated upon their tall stalk, give an agreeable sensation of coolness to the eye.

The effects of the great heat on the human body are allayed by the various wholesome fruits which this season offers. Those which are now ripe are of all others
the

the most cooling and refreshing ; as currants, gooseberries, raspberries, strawberries, and cherries. These are no less salutary and useful, than the richest productions of the warmer climates.

That agreeable article of luxury the mushroom, about this time also appears above ground ; and numbers of that migratory fish, the pilchard, are taken off the coast of Cornwall.

During this month young frogs migrate from the breeding ponds, and betake themselves to the shelter of the long grass. The hoary beetle (*scarabeus solstitialis*) now makes its appearance ; it much resembles the common dor, or cockchaffer, and is chiefly distinguished by not exceeding half the size of this last. The present is also the season when bees begin to expel and kill the drones ; and at this time too the flying ants quit their nests, and disperse to found new colonies.

As the ant is the animal which has passed into a proverb for its supposed frugality,
I 3 foresight,

forefight, and industry, it will be amusing to correct in a few words the erroneous opinions that have been entertained concerning it, by giving a short sketch of its manners and habits.

Ants, like bees and most other insects that dwell in large communities, are divided into male, female, and neuter. Of these, the neuters or labourers are without wings, the males and females have wings, and are distinguished from each other by the superior size of the females. Their dwelling is called an *ant-hill*, which is generally situated at the foot of a tree, under a wall, or in any place sufficiently exposed to the sun and sheltered from the cold. In the hill are three or four passages that lead obliquely down, a foot or more, to a large vaulted chamber; the centre of which is the habitation and place of general assembly for the old ones, while the eggs and young worms are ranged in orderly lines between the centre and sides.

If one of these chambers be opened in the winter, it will be found to contain some eggs and a considerable number of labourers alone, in a state of torpor. As the spring advances, the ants resume their labours, the eggs hatch, and going through the usual process disclose a considerable proportion of labourers and a few males and females; the young females soon begin to deposit their eggs, and the hill swarms with inhabitants. About the latter end of July the males and females either emigrate, or are expelled by the labourers; the males wander about for a time and soon die, but the impregnated females immediately set about scooping holes in the ground in which they deposit their eggs, and thus each becomes the mother of a new colony: two or three hundred of the eggs are usually converted into labourers before winter: at the approach of cold weather the mother dies, the remainder become torpid till the succeeding spring, when they recommence

their work. The stock of eggs is hatched into labourers, males and females; and the population of the colony rapidly increases during the summer. They lay up no provisions, not even for a single day; and during boisterous rainy weather are therefore obliged to be contented with a very scanty share of food. They prey upon almost every animal or vegetable substance, particularly beetles, caterpillars, dead mice, rats, or frogs, honey, the saccharine juices that exude from the leaves of trees, and fruits of every kind. They are sometimes successfully employed in clearing trees of caterpillars, by smearing the trunk for a few inches with tar or any other adhesive matter, and then turning a number of ants loose on the branches; for their escape being prevented by the girdle of tar, they are under the necessity of continuing in the tree, and having no other food, will in a short time devour or expel all the caterpillars. When one ant, or a few, meet with a larger quantity of provision

than

than they are able to convey to the nest, they return and inform their comrades, who fall forth in a large body to carry off the prize. In America, and on the African coast, there occasionally happens an irruption of such infinite multitudes as to be an object of serious alarm, even to the human inhabitants; of one of these incursions the following quotation is a curious account.

“ During my stay,” says Smith, “ at Cape-coast Castle, a body of these ants came to pay us a visit in our fortification. It was about day-break when the advanced guard of this famished crew entered the chapel, where some negro servants were asleep on the floor. The men were quickly alarmed at the invasion of this unexpected army, and prepared as well as they could for a defence. While the foremost battalion of insects had already taken possession of the place, the rear guard was more than a quarter of a mile distant; the whole ground seemed alive,

alive, and crawling with unceasing destruction. After deliberating a few moments on what was to be done, it was resolved to lay a large train of gunpowder along the path they had taken; by this means millions were blown to pieces, and the rear-guard perceiving the destruction of their leaders, thought proper instantly to return, and make back to their original habitation."

Poultry moult during this month; and young partridges are found among the corn.

The first broods of swallows and martins now begin to congregate, and before they come to their full strength and command of wing, suffer severely from the attacks of hawks and other birds of prey.

The farmer's chief employment in July, is getting home the various products of the earth. It is the principal hay-month in the northern parts of England, and the work-people suffer much fatigue from the excessive heat to which they are exposed.

Flax

Flax and hemp are pulled in this month. These plants are cultivated in various parts of Europe, more than in England. The stalks of both are full of tough fibres or strings, which, separated and prepared in a particular manner, become fit for spinning into thread. Of flax linen is made, from the finest cambric, to the coarsest canvass. Hemp is chiefly used for coarse cloth, such as strong sheeting, and facking; but it is sometimes wrought to considerable fineness; it is also twisted into ropes and cables.

The corn-harvest begins in July in the southern parts of the island; but August is the principal harvest-month for the whole kingdom.

A U G U S T.

Fair Plenty now begins her golden reign,
 The yellow fields thick-wave with ripen'd grain;
 Joyous the swains renew their sultry toils,
 And bear in triumph home the harvest's wealthy spoils.

THE commencement of this month is still hot, and usually calm and fair; and those vegetable productions that yet require the powerful influence of the sun are daily advancing to maturity. The farmer beholds the chief object of his culture, and the principal source of his riches, waiting only for the hand of the gatherer. Of the various kinds of grain, rye and oats are usually the first ripened; this, however, varies with the time of sowing, and some of every species may be seen at once fit for cutting.

Every fair day is now of great importance, since, when the corn is once ripe, it is liable to continual damage while standing,

standing, either from the shedding of the seeds, the depredations of birds, or sudden storms. The utmost diligence is therefore used by the careful husbandman to get it safely housed, and labourers are hired from all quarters to hasten the work.

Pour'd from the villages a numerous train
Now spreads o'er all the fields. In form'd array
The reapers move, nor shrink for heat or toil,
By emulation urg'd. Others dispers'd
Or bind in sheaves, or load or guide the wain
That tinkles as it passes. Far behind,
Old age and infancy with careful hand
Pick up each straggling ear.

This interesting scene is beheld in full perfection only in the open-field countries, where the sight can at once take in an uninterrupted extent of land waving with corn, and a multitude of people engaged in the various parts of the labour. There is no prospect more generally pleasing than this, and which affords a more striking example of the effect of
associated

associated sentiments, in converting into a most delightful view that which, in itself considered, is certainly far inferior in variety and beauty to what is daily passed by with indifference or even disgust.

The gathering in of the harvest is a scene that addresses itself not so much to the eye as the heart, and the emotions that it gives birth to are not so much those of delight and surprise, as the satisfactory termination of anxiety, and, in consequence, benevolence to man and gratitude to the Being who fills our stores with plenty, and our minds with gladness.

Be not too narrow, husbandmen! but fling,
From the full sheaf, with charitable stealth,
The liberal handful. Think, oh! grateful think,
How good the God of harvest is to you,
Who pours abundance o'er your flowing fields.

THOMSON.

In a late season, or where favourable opportunities of getting in the harvest have been neglected, the corn often suffers

fers greatly from heavy storms of wind and rain. It is beaten down to the ground, the seeds are shed or rotted by moisture ; or if the weather continues warm, the corn *grows*, that is, the seeds begin to germinate and put out shoots. Grain in this state is sweet and moist ; it soon spoils on keeping ; and bread made from it is clammy and unwholesome.

Harvest concludes with the field peas and beans, which are suffered to become quite dry and hard before they are cut down. The blackness of the bean-pods and stalks is disagreeable to the eye, though the crop is valuable to the farmer. In England they are used as food for cattle only, as the nourishment they afford, though strong, is gross and heavy ; but in most of the other European countries they contribute largely to the sustenance of the lower classes.

The rural festival of *harvest-home* is an extremely natural one, and has been observed in almost all ages and countries.

What can more gladden the heart than to see the long-expected products of the year, which have been the cause of so much anxiety, now safely housed and beyond the reach of injury?

Inwardly smiling, the proud farmer views
The rising pyramids that grace his yard,
And counts his large increase; his barns are
stor'd,
And groaning saddles bend beneath their load.

SOMERVILLE.

The poor labourer, too, who has toiled in securing another's wealth, justly expects to partake of the happiness. The jovial harvest-supper cheers his heart, and induces him to begin, without murmuring, the preparations for a future harvest.

Hops, which are much cultivated in some parts of England, afford their valuable produce generally in this month. The hop is a climbing plant, sometimes growing wild in hedges, and cultivated on account of its use in the making of malt liquors. Having large long roots, they
I flourish

flourish best in a deep and rich soil ; and are set in small hills at regular distances from each other, about five plants, and three long poles for them to run upon, being placed in each hill. They appear above ground early in the spring, and as they grow fast, have generally by the latter end of June, or the beginning of July, reached the top of the poles, which are from sixteen to twenty feet long, after which they push out many lateral shoots and begin to flower. At this time the hop gardens make a most beautiful appearance; the poles being entirely covered with verdure, and the flowers depending from them in clusters and light festoons. The hops, which are the scaly seed-vessels of the female plants, are picked as soon as the seed is formed ; for which purpose the poles are taken up with the plants clinging to them, and the hops picked off by women and children, after which they are dried over a charcoal fire, and exposed a few days to the air in

order to take off the crispness produced by the heat ; they are then closely packed in sacks and sent to market, where they are purchased by the brewers, who employ them in giving the fine bitter flavour to their beer, which both improves its taste and makes it keep longer than it otherwise would do. This crop is perhaps the most precarious and uncertain of any, on which account hops are a commodity that is more the object of commercial speculation than any other. The plants are infested by grubs that harbour in their roots, and greatly delay, and sometimes entirely prevent, their shooting ; and these grubs changing into flies, swarm upon and destroy the leaves and shoots of such as escaped them in their grub state : this pest is called the *fen*. *Blights*, too, of various sorts, both with and without insects, often frustrate the hopes of the cultivator, and in a few days desolate the most promising plantations. No effectual remedy has yet been found for these evils ;
it

it is probable, however, that some benefit might be produced by planting a small number of *male* hops in each garden (for the hop is of that order of vegetables which bear the male and female flowers on different plants). The advantage of this practice is experimentally proved with regard to the ash and elm, which are of the same order; for it is remarked, that the plantations in which there is a mixture of male and female trees, are far more vigorous, and less liable to blights, than those which consist solely of females or males.

The number of plants in flower is now very sensibly diminished. Those of the former months are running fast to seed, and few new ones supply their places. The uncultivated heaths and commons are now, however, in their chief beauty from the flowers of the different kinds of heath or ling, with which they are covered, so as to spread a rich purple hue over

the whole ground. Low moist lands, too, are adorned with the gentiana amarella, and the beautiful purple blossoms of the colchicum autumnale, or meadow saffron.

Several species of the numerous tribe of *ferns* begin now to flower. These plants, together with mosses, lichens, and the various kinds of sea-weed, are arranged by botanists in the class *Cryptogamia*, the individuals of which have small inconspicuous and generally colourless flowers, or rather seed vessels, for they have no petals. The tallest species in these kindred families are the *ferns*, some of which, that are natives of America, greatly resemble, and equal in height, the lower of the kinds of palm trees. They may be distinguished by their pinnated or finely divided winged leaves, and their rust coloured seeds, which are produced in small circular dots, or lines, or patches, on the back of the leaves. One of the commonest species in this

country is the *fern*, or *brakes*; another not unfrequent sort is the *polypody*, or *harts-tongue*, with long undivided leaves of a bright green, adorning with their tufts the base of moist shady rocks: but the most beautiful kind that this island produces is the *female*, or *wood-polypody*, with large deep green tufted leaves, very finely divided, frequently found in considerable plenty in rocky woods; when placed in a green-house it acquires a brighter colour, and a more luxuriant growth; it becomes an evergreen and extremely ornamental plant. The uses in the economy of nature of this numerous family are many and important: growing in places where few other vegetables will flourish, as heaths, commons, marshes, and woods, they afford by their broad spreading leaves a very acceptable shelter to various birds and small quadrupeds, as well as to the more lowly and tender plants; the sweet mucilage with

which their roots abound, gives nourishment to many insects, and contributes to the sustenance of the human species in the northern and most barren parts of the globe: in this country, the common brakes are made use of for littering cattle, and thatching, and, when green, are burnt in great quantity for the alkali that they contain.

Some of the choicest wall fruits are now coming into season.

The funny wall

Presents the downy peach, the shining plum,
The ruddy fragrant nectarine, and dark
Beneath his ample leaf, the luscious fig.

Some time about the middle of the month, the viper brings forth her young: they couple in March or April, and from twelve to twenty-five eggs are formed in the ovary of the female, and hatched there; from which soon after issue the young, nearly of the size of earth worms.

The

The insects that make their appearance during this month, are the *apis manicata*, one of the species of solitary bees; the *papilio machaon*, *femele*, *phlæas*, and *paphia*, some of the latest butterflies; the *phalena pæcta*, a white moth; and the *ptinus pectinicornis*, which in its larva state is well known by the holes that it bores in wooden furniture. Flies also abound in windows at this period. Bulls begin their shrill autumnal bellowing.

About the 12th of August the largest of the swallow tribe, the swift, or long-wing, disappears. As the weather is still warm, they cannot be supposed to retire to holes and caverns, and become torpid during the winter; and being so admirably formed for flight, it can scarcely be doubted that they now migrate to some of the southern regions. Nearly at the same time rooks no longer pass the night from home, but roost in their

nest trees. Young broods of goldfinches are still seen ; lapwings and linnets begin to congregate ; and the redbreast, one of our finest, though commonest songsters, renews his music about the end of the month.

SEPTEMBER.

Now softened suns a mellow lustre shed,
 The laden orchards glow with tempting red;
 On hazel boughs the clusters hang embrown'd,
 And with the sportsman's war the new-thorn
 fields resound.

THIS is, in general, a very pleasant month, the distinguishing softness and serenity of autumn prevailing through great part of it. The days are now very sensibly shortened, and the mornings and evenings are chill and damp, though the warmth is still considerable in the middle of the day. This variation of temperature is one cause why autumn is an unhealthy time, especially in the warmer climates, and in moist situations; persons who are obliged to go abroad early or late in this season should be guarded by warm clothing against the cold fogs.

In

In late years, and especially in the northern parts of the island, a good deal of corn is abroad at the beginning of September, on which account, the day on which partridge-shooting commences, has of late been deferred by the legislature from the first to the fourteenth of this month.

The partridge is one of the species of the order of *gallinæ*, which includes those birds which have a strong, hard, somewhat curved bill, short wings, rather long and muscular legs, and the toes terminated in short thick straight nails; of this conformation the necessary result is their feeding on grain, and other seeds, which they find by scratching up the earth; and their living chiefly on the ground, making much use of their legs, and little of their wings.

Partridges pair early in the spring, and about the month of May, deposit their eggs to the number of sixteen or eighteen in a shallow hole on the bare ground;
the

the hen sits twenty-two days, and the young come forth full feathered like chickens, and capable of running, and picking up ants, flugs, grain, or any other food that is shewn to them by their parents.

While the corn is standing they have a ready and safe retreat from most of their numerous enemies, and when they happen to be surpris'd, will exhibit wonderful instances of instinct in their attachment to their young, and of courage and skill in their defence. If danger approaches their young brood before they are able to fly, both the parents immediately take wing, and the young ones cower down under the nearest shelter, where they remain perfectly motionless; the hen, after having flown two or three hundred yards, lights on the ground, and immediately running along the furrows, soon arrives at the place whence she set out, collects her little family, and withdraws them to a place of safety; the cock, in the mean
3 time,

time, endeavours to engage the attention of the sportsman by fluttering before him a few yards at a time, as if wounded, and thus draws him in the eagerness of pursuit to a sufficient distance from his young: after which, when all danger is over, the call of the female directs him to her retreat. In the absence of the cock the hen will take this part upon herself. Of this an interesting example is found in White's Naturalist's Calendar.

“ A hen partridge came out of a ditch, and ran along, shivering with her wings, and crying out as if wounded, and unable to get from us. While the dam acted this distress, the boy who attended me saw her brood, that was small and unable to fly, run for shelter into an old fox-earth under the bank.”

When the corn is cut, partridges generally resort in the day-time to groves and covers, to be out of the reach of birds of prey; but at night the dread of foxes, weasels, and other small wild quadrupeds
that

that hannt these sheltered places, drives them to the open stubble, in the middle of which they nestle together, and spend the hours of darkness. Their most formidable enemy, however, is man, from whom they have no means of escape: his pointers discover them in their most secret hiding places, and either oblige them to take wing and expose themselves to be shot, or to endure the still greater danger of being enclosed in nets on the ground by whole coveys at once.

In his mid career, the spaniel struck,
Stiff, by the tainted gale, with open nose,
Outstretch'd, and finely sensible, *draws* full,
Fearful and cautious, on the latent prey;
As in the sun the circling covey bask
Their varied plumes, and watchful every way
Thro' the rough stubble turn the secret eye.

THOMSON.

A singular vegetable production which is gathered this month, is *saffron*. The saffron plant is a species of *crocus*, cultivated chiefly in Essex, and a considerable

able tract of ground, about ten miles across, between Cambridge and Saffron-walden. The saffron-grounds vary in extent from one to three acres, which, after being well manured, are planted some time in the month of July, allowing about 200,000 roots to an acre: these flower successively for about three weeks in September, and the blossoms are collected every day before they are thoroughly expanded: when gathered, they are immediately spread upon a large table, and the fine branched filaments on the inside of the flower, called *stamens*, or *chives*, are pulled out by women and children; all the rest is thrown away. The crop thus procured is dried in flat square cakes, and then becomes ready for sale. A saffron-ground lasts three years; and on an average yields for the first crop about ten pounds of wet saffron, or two of dried, per acre; the produce of the two next years is about twenty-four pounds of dried: so that the whole useful produce of an acre

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in three years, is not more than twenty-six pounds weight. Saffron is of a deep orange colour, and a very strong aromatic odour: it is used in medicine as a cordial, and was formerly much esteemed in cookery. It gives a fine bright yellow dye. That produced in England is generally esteemed the best.

Very few other flowers, except the ivy, open in this month; but some degree of variety is introduced into the landscape by the ripening fruits.

The labours of the husbandman have but a very short intermission; for no sooner is the harvest gathered in, than the fields are again ploughed up and prepared for the winter corn, rye, and wheat, which is sown during this month and the next.

At this time it is proper to straighten the entrance of bee-hives, that wasps and other depredators may have less opportunity of getting in and devouring the honey.

The

The annual arrival of the herrings, offers at this time a peculiar and valuable harvest to the inhabitants of the eastern and western coasts of the island.

The great winter rendezvous of the herring is within the arctic circle, where they continue many months to recruit themselves after spawning in those unfathomed depths, that swarm with insects upon which they feed. This innumerable army begins to put itself in motion in the spring, in order to deposit its spawn in the warmer latitudes. Its forerunners appear off the Shetland islands in April and May, but the grand shoal does not appear till June: it is attended by gannets, and other sea birds, in prodigious multitudes, and vast numbers of dog-fish and porpoises, all of which are supported without sensibly diminishing a host, in which millions more or less are of no account. The breadth and depth of the main body is such as to alter the appearance of the very ocean; it is divided

vided into distinct columns of five or six miles in length, and three or four in breadth, driving the water before them with a very perceptible rippling; sometimes they sink for the space of ten or fifteen minutes, then rise again to the surface, and in bright weather exhibit a resplendency of colours like a field of gems.

The first check that this army experiences in its march southwards, is from the Shetland isles, which divide it into two parts; the eastern wing passes on towards Yarmouth, the great and ancient mart for herrings, filling every bay and creek with its numbers; it then advances through the British channel, and disappears. The western wing, after offering itself to the great fishing stations in the Hebrides, proceeds towards the north of Ireland, where it is obliged to make a second division: the one takes to the western side, and is scarcely perceived, being soon lost in the immensity of the Atlantic; but the other,

L passing

passing into the Irish sea, feeds and rejoices the inhabitants of most of the coasts that border on it.

Towards the end of the month, the chimney or common swallow disappears. There have been various conjectures concerning the manner in which these birds, and some of their kindred species, dispose of themselves during the winter. The swift is the only one of this genus, about which there appears to be little or no controversy, its early retreat and strength of wing rendering its migration almost certain: but with regard to the rest, namely, the swallow, the martin, and sand-martin, there are three current opinions, each of which deserves consideration.

The first, which is principally adopted by the Swedish and other northern naturalists, is, that these birds pass the cold months in a *torpid state under water*. This apparently improbable supposition is supported by the following arguments: the
places

places in which the species in question are seen, the latest and earliest in the year, are the banks of large deep ponds and rivers. About the time of their disappearing they are observed to roost in vast numbers on branches of trees that overhang the water, which by their weight are observed to be bent, so as nearly to touch the surface. Some obscure reports of swallows having been dragged up in a torpid state from the bottom of lakes, have been eagerly embraced by the favourers of this hypothesis, and the proof is thus supposed to be complete. Against this opinion there are the following obvious arguments: the swallow tribe live wholly on insect-food, and it is in the neighbourhood of waters that gnats and various other winged insects principally abound; when therefore food is scarce, it is not to be wondered at, that these birds should resort to those places where it is almost always to be found in a greater or

less quantity. Young swallows, in autumn, are universally observed to roost on trees, and to be extremely fond of congregating; when therefore they have fatigued themselves with hawking all day about the water, it is highly probable that they should collect in large numbers on the nearest trees; and, besides, those branches that hang over the water are less accessible to rats, weasels, and others of their enemies. Another reason too, on the supposition of their migration, may account for their resorting in autumn to the sides of rivers; for by following the course of the stream, they would more readily find their way to the sea. The supposed fact of swallows having been found in a torpid state under water, greatly wants confirmation: it is likely enough, indeed, that they may have been drowned, while roosting, by the rising tide, and been fished up a few hours after, possibly, even while in a state of suspended animation;

animation; but their internal structure wholly unfits them for existing for any length of time immersed in water.

A more probable opinion than the former, is that those species of swallows above mentioned, *retire like bats to caverns and other sheltered places during the cold weather, where they pass their time in a torpid state*, except when, revived by a fine day or two, they are induced by hunger to make their appearance in the open air: for it is a known fact, and one that happens almost every year, that a week of tolerably mild weather in the middle of winter never fails to bring out a few swallows, who disappear again on the return of the frost. There are also a few sufficiently authenticated instances of swallows having been found torpid in the shafts of old coal-pits and cliffs by the sea-side. These facts, as far as they go, are conclusive; namely, that some individuals of these species pass the winter in this country in a torpid state; but the instances are

by no means sufficiently numerous to preclude the necessity of disposing of the main body in another way ; for from their multitudes, if they all never quitted this country, it ought to be by no means an uncommon thing to discover them in their winter abodes ; especially as of late years they have been accurately searched for, and the holes of the sand-martins have been repeatedly laid open without the smallest success.

Concerning the third hypothesis, the *migration* of the swallow tribes, it may be observed, that all the birds of this genus are far better flyers than many others whose migration is universally allowed, and that the deficiency of food is a very sufficient motive to induce them to retreat to warmer climates ;—that the sudden appearance in spring of the main body, and their disappearance in autumn, together with the occasional appearance of a *few* during mild weather in the winter months, speaks loudly in favour of migration. But
there

there are yet other more decisive facts to be related in proof of this opinion.

Mr. White, one of the most accurate observers that this country has produced, in his Natural History of Selborne says, “ If ever I saw any thing like actual migration, it was last Michaelmas day. I was travelling, and out early in the morning; at first there was a vast fog, but by the time that I was got seven or eight miles towards the coast the sun broke out into a delicate warm day. We were then on a large heath or common, and I could discern, as the mist began to clear away, great numbers of swallows (*hirundines rusticæ*) clustering on the stunted shrubs and bushes as if they had roosted there all night. As soon as the air became clear and pleasant they were all on the wing at once; and by a placid and easy flight, proceeded on southwards toward the sea; after this I did not see any more flocks, only now and then a straggler.”

Having thus launched our swallows, let us follow them in their course across the sea. In the spring of the year, Sir Charles Wager on his return up channel from a cruise, during some very stormy weather, as soon as he came within soundings, fell in with a large flock of swallows, who immediately settled like a swarm of bees on his rigging; they were so tired as to suffer themselves to be taken by hand, and so much emaciated from the long continuance of heavy gales that they had to contend with, as to be reduced to mere skin and bone. After resting themselves for the night, they renewed their flight next morning. Willoughby, the first British ornithologist, during a visit in Spain, observed multitudes of half starved swallows in the province of Andalusia, on their progress to the south. And the brother of Mr. White before mentioned, who resided a considerable time at Gibraltar, had ocular demonstration during the spring and autumn of the migration
of

of birds across the Straits, among whom were myriads of the swallow tribe, and many of our soft-billed birds of passage. In passing these Straits they scout and hurry along in little detached parties of six or seven in a company, and sweeping low just over the land and water, direct their course to the opposite continent at the narrowest passage that they can find. They usually slope across the bay to the south-west, and so pass over to Tangier.

From all the above considerations it seems to be pretty evident that swallows do not spend the winter under water: that a few, probably some of the later broods, remain with us during the winter, for the most part, in a state of torpidity: but that the main body migrates across the channel to Spain, and thence at Gibraltar passes to the northern shores of Africa, returning by the same road, in the spring, to Great Britain.

When

When Autumn scatters his departing gleams,
Warn'd of approaching Winter, gathered, play
The swallow-people; and tofs'd wide around,
O'er the calm sky, in convulsion swift,
The feathered eddy floats: rejoicing once,
Ere to their wintry slumbers they retire;
In clusters clung, beneath the mould'ring bank,
And where, unpierc'd by frosts, the cavern
sweats,
Or rather into warmer climes convey'd,
With other kindred birds of season, there
They twitter cheerful, till the vernal months
Invite them welcome back: for, thronging, now
Innumerable wings are in commotion all.

THOMSON.

Besides the swallow tribe, many other
of the small soft-billed birds that feed on
insects disappear on the approach of cold
weather. To judge from their diminutive
size and feebleness of wing, it would
scarcely be imagined that these could possibly
emigrate. It is probable, indeed,
that numbers of them are annually lost
in attempting to cross the sea, but from
the circumstance of their having been
actually seen crossing the straits of Gibraltar

braltar to Africa late in autumn, and returning northward early in spring; and from there being no instance on record of their having been seen during our winters, either in a state of torpidity, or roused into activity by a warm day, there seems no reason to doubt the reality of their emigration.

On the other hand, some birds at this season arrive from still more northerly countries to spend the winter with us. The fieldfare and redwing, whose departure was mentioned in March, return about the end of September; at which time also an internal migration takes place of the ring-ouzel from the mountains of Wales, Scotland, and the north of England, to the southern coast and other sheltered situations. These three species feed chiefly on the berries with which our woods and hedges are plentifully stored the greater part of the winter.

The wood-owl now begins to hoot, the stone-curlew to clamour; and those
sweet

sweet and mellow-toned songsters the woodlark, thrush, and blackbird, commence at this time their autumnal music.

About the middle of the month, the common snake *sloughs* or casts its skin; it appears to part with its whole external covering, even the outer coat of the eyes scales off, and is left in the head of the slough like a pair of spectacles. While the snake undergoes this operation he entangles himself intricately in the grass and weeds, in order by their friction to facilitate the changing of his garment. The slough is found inverted without any rent in it, from which it appears that this reptile creeps out at the mouth of the slough, quitting the tail part last, in the same manner as eels are skinned.

Very few insects come forth so late in the season; the phalena ruffula and papilio hyale, however, now make their appearance.

The most useful fruit that this country affords, the apple, successively ripens;
according

according to its several varieties, from July to October: but the principal harvest of them is about the close of this month. They are now gathered for our English vintage, the *cyder-making*, which in some counties, particularly Worcestershire, Somersetshire, and Devonshire, is a busy and important employment; but, like the hop, it is so precarious a produce, as to render it unwise for the cultivator to place his chief dependence on it.

Autumn paints

Ausonian hills with grapes, whilst English plains
Blush with pomaceous harvests, breathing sweets.
O let me now, when the kind early dew
Unlocks th' embosom'd odours, walk among
The well rang'd files of trees, whose full-aged
store
Diffuse ambrosial steams.
Now, now's the time; ere hasty suns forbid
To work, disburthen thou thy sapless wood
Of its rich progeny; the turgid fruit
Abounds with mellow liquor.

PHILIP3.

The

The apples, after being carefully gathered, are laid a while to mellow, and then crushed in a mill and pressed till all their juice is extracted. This, after being fermented, becomes cyder, which may properly be called *apple-wine*. Pears treated in the same manner yield a vinous liquor called *perry*. The richest and strongest kinds are distributed for sale over the whole country, and the inferior sorts serve as common drink in the districts where they are produced.

Another agreeable product of our thickets and gardens, the hazel-nut, is fit for gathering at this time.

Ye virgins, come, for you their latest song
The woodlands raise; the clattering nuts for you
The lover finds amid the secret shade;
And, where they burnish on the topmost bough,
With active vigour crushes down the tree,
Or shakes them ripe from the resigning bush.

The oak now begins to shed its acorns,
and the nuts fall from the beech, both of
which

which have the name of *mast*. These, in the extensive woodland tracts of the Continent, afford a plentiful food to the swine, which are allowed to range in them at this period. In England, most of the old forests are fallen to decay, but in the few that still remain in the southern parts of the island, particularly the New forest, this annual supply of what in primitive times constituted the chief food of man, affords a luxurious pasturage for six weeks, from about the end of September, to the hogs that are kept on the borders of the forest. In Mr. Gilpin's elegant *Remarks on Forest Scenery*, there is a most entertaining account of the manners and management of the hogs during the time of their autumnal residence in the woods; from which the following account is extracted.

“ The first step the swineherd takes, is to investigate some close sheltered part of the forest, where there is a conveniency of water, and plenty of oak or beech
mast;

mast; the former of which he prefers when he can have it in abundance. He next fixes on some spreading tree, round the bole of which he wattles a slight, circular fence of the dimensions he wants; and covering it roughly with boughs and fods, he fills it plentifully with straw or fern.

“ Having made this preparation, he collects his colony among the farmers, with whom he commonly agrees for a shilling a head, and will get together a herd of five or six hundred hogs. Having driven them to their destined habitation, he gives them a plentiful supper of acorns or beech mast, which he had already provided, sounding his horn during the repast. He then turns them into the litter, where, after a long journey and a hearty meal, they sleep deliciously.

“ The next morning he lets them look a little around them, shows them the pool or stream where they may occasionally drink, leaves them to pick up
the

the offals of the last night's meal, and as evening draws on, gives them another plentiful repast under the neighbouring trees, which rain acorns upon them for an hour together at the sound of his horn. He then sends them again to sleep.

“ The following day he is perhaps at the pains of procuring them another meal, with music playing as usual. He then leaves them a little more to themselves, having an eye, however, on their evening hours. But as their bellies are full, they seldom wander far from home, retiring commonly very orderly and early to bed.

“ After this he throws his stye open, and leaves them to cater for themselves; and from henceforward has little more trouble with them during the whole time of their migration. Now and then in calm weather, when mast falls sparingly, he calls them perhaps together by the

M music

music of his horn to a gratuitous meal; but in general they need little attention, returning regularly home at night, though they often wander in the day two or three miles from their sty. There are experienced leaders in all herds, which have spent this roving life before; and can instruct their juniors in the method of it. By this management the herd is carried home to their respective owners in such condition, that a little dry meat will soon fatten them."

On the twenty-second of September happens the autumnal equinox; that is, the sun arrives at one of the two equinoctial points, formed by the crossing of the equator and equinoctial circle, at which period the days and nights are equal all over the earth. This, as well as the vernal equinox, is generally attended with heavy storms of wind and rain, which throw down much of the fruit that yet remains on the trees.

By

By the end of this month the leaves of many trees lose their green colour, and begin to assume their autumnal tints; which, however, are not complete till the ensuing month.

OCTOBER.

The fading many-colour'd woods,
 Shade deep'ning over shade, the country round
 Imbrown; a crowded umbrage, dusk and dun,
 Of every hue, from wan declining green
 To footy dark.

THE chief business of nature at this season, as far as concerns the vegetable world, appears to be *diffemination*. Plants having gone through the progressive stages of springing, flowering, and seed-ing, have at length brought to maturity the rudiments of a future progeny, which are now to be deposited in the fostering bosom of the earth. This being performed, the parent vegetable, if of the *herbaceous* kind, either totally perishes or dies down to the root; if a *tree*, or *shrub*, it casts all those tender leaves that the
 spring

spring and summer had put forth. Seeds are scattered by the hand of nature in various manners. Those of them which are furnished with plumes, or wings, are dispersed far and wide by the high winds which arise about this time. Hence plants with such seeds are of all others the most generally to be met with; as dandelion, groundsel, ragwort, thistles, &c. Others, by means of hooks with which they are furnished, lay hold of passing animals, and are thus carried to distant places. The common burs are examples of this contrivance. Several when ripe are thrown out with considerable force from their receptacle by means of a strong spiral elastic spring, of which the *impatiens*, or touch-me-not, and all the species of *cardamine*, or cuckoo-flower, are instances. Many are contained in berries, which being eaten by birds, the seeds are discharged again uninjured, and grow wherever they happen to light. Thus has nature carefully provided for

the propagation and wide distribution of her vegetable offspring.

The gloom of the declining year is, however, during this month enlivened by the variety of rich and bright colours, exhibited by the fading leaves of shrubs and trees. So varied and glowing, indeed, are the tints, so harmonious their combinations, so exquisitely tender and soothing the emotions that they give birth to, as to render our autumnal scenery, both to the painter and man of sentiment, more interesting than the blossoms of spring or the radiance and verdure of summer.

Those virgin leaves, of purest vivid green,
Which charm'd ere yet they trembled on the
trees,

Now cheer the sober landscape in decay :
The lime first fading ; and the golden birch,
With bark of silver hue ; the moss-grown oak,
Tenacious of its leaves of russet brown ;
Th' ensanguin'd dogwood ; and a thousand
tints

Which Flora, dress'd in all her pride of bloom,
Could scarcely equal, decorate the groves.

To

To these fugitive colours are added the more durable ones of ripened berries, a variety of which now adorn our hedges. Among these are particularly distinguished the hip, the fruit of the wild rose; the haw, of the hawthorn; the sloe, of the blackthorn; the blackberry, of the bramble; and the berries of the bryony, privet, honeysuckle, elder, holly, and woody-nightshade. These are a valuable supply for the birds during the cold weather; and it is said, upon the authority of lord Bacon, that they are most plentiful when the ensuing winter is to be most severe.

The common martin, whose nests, hung under the eaves of our houses, afford so agreeable a spectacle of parental fondness and assiduity, after having reared its second brood, disappears about the middle of October; and in a few days after, its example is followed by the sand-martin, the smallest kind of swallow, as well as the latest in its migration.

The royston or hooded crow, which breeds in Scotland and other northern regions, migrates to the southern districts of this island, being forced by the snow from its native haunts. It is readily distinguished by its ash-coloured back, and black head. Next to the raven it is the most destructive bird of its genus that is known in this country, destroying lambs and young partridges, and moor-fowl, and picking out the eyes of horses that happen to be entangled in bogs; on which account, in several parts of Scotland, it is proscribed, and a reward offered for its head. The woodcock about this time begins to be found on our eastern coasts, though the main body of them does not arrive till November or December. Various kinds of water-fowl arrive from their arctic summer-residence in search of a more temperate winter on the shores of Britain. About the middle of the month wild geese quit the fens, and go up to the
rye

rye lands, where they devour the young corn.

It is curious and highly amusing to observe the evening proceedings of the rooks at this period of the year. Just before dusk, returning from the foraging excursions of the day, before they betake themselves to roost in their nest-trees, they congregate in large numbers, and wheeling round in the air, sport and dive in a playful manner, all the while exerting their voices, and making a loud cawing, which being blended and softened by distance, becomes a pleasing murmur, not unlike the cry of a pack of hounds in deep hollow woods, or the tumbling of the tide on a pebbly shore. Stares begin to congregate about this time, assembling in the fen countries in such vast multitudes as to destroy by their weight the reeds on which they perch, to the damage of the farmers, who derive no inconsiderable profit from the sale of the reeds, which, for
thatching,

thatching, are superior to every other material.

The weather during this month is sometimes extremely misty, with a perfect calm. The ground is covered with spiders webs innumerable, crossing the paths, extending from shrub to shrub, and floating in the air. This appearance is called *gossamer*, and is caused by an infinite multitude of small spiders, which, when they want to change their place, have a power of shooting forth several long threads, to which they attach themselves, and thus becoming buoyant, are carried gently through the air as long as they please, after which, by coiling up their threads, they descend very gradually to the ground. A remarkable shower of gossamer is described in the following quotation from *White's Natural History of Selborne*. "On September 21, 1741, being intent on field diversions, I rose before day-break; when I came into the enclosures, I found the stubbles and
clover-

clover-grounds matted all over with a thick coat of cobweb, in the meshes of which a copious and heavy dew hung so plentifully, that the whole face of the country seemed, as it were, covered with two or three setting nets drawn one over another. When the dogs attempted to hunt, their eyes were so blinded and hood-winked that they could not proceed, but were obliged to lie down and scrape the incumbrances from their faces with their fore-feet.”—“As the morning advanced, the sun became bright and warm, and the day turned out one of those most lovely ones, which no season but the autumn produces; cloudless, calm, serene, and worthy of the south of France itself.”

“About nine an appearance very unusual began to demand our attention, a shower of cobwebs falling from very elevated regions, and continuing without any interruption till the close of day. These webs were not single filmy threads, floating in the air in all directions, but perfect

perfect flakes or rags ; some near an inch broad, and five or six long. On every side as the observer turned his eyes, might he behold a continual succession of fresh flakes falling into his sight, and twinkling like stars as they turned their sides towards the sun. Neither before nor after was any such shower observed ; but on this day the flakes hung in the trees and hedges so thick that a diligent person might have gathered baskets full."

The fogs during this month and the next, are more frequent and thicker than at any other period of the year. The reason of this will be evident from considering the cause of fogs. There is a constant and very large exhalation from the surface of the earth at all seasons, of water in the form of vapour ; and the warmer the ground the greater will be the evaporation. When the air is warmer, or even but a little colder than the earth, the ascent of vapour is not perceptible to the eye ; but when the temperature of the
air

air is considerably lower, the vapour as soon as it rises is deprived of part of its heat, the watery particles are brought more into union, and they become visible in the form of steam; it is also essential to the formation of fog that there should be little or no wind stirring, in order that the rising exhalations may have full opportunity to condense. The heat of the middle of the days in autumn is still sufficient to warm the earth and cause a large ascent of vapour, which the chilling frosty nights, which are also generally very calm, condense into mists; differing from clouds only in remaining on the surface of the ground.

Now by the cool declining year condens'd,
Descend the copious exhalations, check'd
As up the middle sky unseen they stole,
And roll the doubling fogs around the hill.
- - - - - Thence expanding far,
The huge dusk, gradual, swallows up the plain:
Vanish the woods; the dim-seen river seems
Sullen, and slow, to roll the misty wave.

Even

Even in the height of noon oppress'd, the sun
Sheds weak, and blunt, his wide-refracted ray;
Whence glaring oft, with many a broaden'd orb,
He frights the nations. Indistinct on earth,
Seen thro' the turbid air, beyond the life
Objects appear; and, wilder'd, o'er the waste
The shepherd stalks gigantic. THOMSON.

This month is the height of the hunting season: the temperature of the weather being peculiarly favourable to the sport; and as the products of the earth are all got in, little damage is done by the horsemen in pursuing their chace across the fields.

All now is free as air, and the gay pack
In the rough bristly stubbles range unblam'd;
No widow's tears o'erflow, no secret curse
Swells in the farmer's breast, which his pale lips
Trembling conceal, by his fierce landlord aw'd:
But courteous now he levels every fence,
Joins in the common cry, and halloos loud,
Charm'd with the rattling thunder of the field:

SOMERVILLE.

It is usually in October that the beehives are despoiled of their honey. As

long as flowers are plentiful, the bees continue adding to their store; but when these fail, they are obliged to subsist on the produce of their summer labours; from this time, therefore, the hive decreases in value. Its condition is judged of by its weight. The common way of procuring the honey, is by destroying the industrious collectors of it, with the fumes of burning brimstone. This cruel necessity may, however, be prevented by using hives or boxes so contrived as to exclude the bees from the different partitions as they become filled; or by employing fumes that will stupify without killing them. In this case enough of the honey must be left for their subsistence during winter; but this is found to deduct so materially from the profits, as, in a pecuniary point of view, to render it a much less eligible way than the usual one.

In most of the wine countries of Europe, the *vintage* takes place in October. The grape is one of the latest fruits in ripening.

ripening. When gathered they are immediately pressed, and the juice is fermented like that of apples in making cyder. A great variety of wines are produced from the different kinds of grapes, or the diversity of climates where they grow. In England, this fruit does not ripen with sufficient constancy to be worth cultivation for the purpose of making wine.

This month is particularly chosen, on account of its mild temperature, for the brewing of malt liquor designed for long keeping, which is therefore commonly called *old October*.

The first of the month is the day appointed, by act of parliament, for the commencement of the *decoy* business, which about the close of October is at its height. The extensive marsh-lands of Lincolnshire are the tract that is chiefly resorted to in this country by the wild-ducks, and other water-fowl, and prodigious numbers of them are annually taken in the decoys.

A decoy

A decoy is generally made where there is a large unfrequented pond surrounded by wood, and backed by a marshy and uncultivated country. In different quarters of the pond are constructed *pipes* as they are called, or narrow ditches, covered with a continued arch of netting, and suspended on hoops, growing narrower as they advance into the wood, and terminating in a purse net. On both sides of the pipe are reed-hedges with intervals between, for the decoy-man to observe what is going on; a number of *decoy ducks* are also procured, which are taught to lead the wild ones into the snare.

As soon as the evening sets in, the decoy *rises* and the wild-fowl approach the shores to feed during the night; the flapping of their wings may be heard in a still night to a great distance, and is a pleasing though melancholy sound. The decoy-ducks soon meet with the wild ones, and conduct them to the mouth of the snare: the man behind the reeds then

N

throws

throws into the pipe some hempseed, of which these birds are very fond, and are thus tempted to advance a little way under the netting. A very small dog well trained for the purpose is next ordered to play about before the screens, and bark at the ducks, who, vexed at being disturbed by so petty an assailant, advance to drive him off. When they have by this means been seduced a considerable way up the tunnel, the decoy-duck by diving gets out of the arched net, and the man coming from behind the hedge appears at the entrance of the pipe: the wild-fowl not daring to rush by him immediately dash forwards into the purse-net, where they are taken.

The London market is principally supplied from the Lincolnshire decoys; ten of which, near Wainfleet, have been known to send to the metropolis, in a single season, thirty-one thousand two hundred ducks, teals, and wigeons.

The farmer continues to sow his corn
during

during this month; and wheat is frequently not all sown till the end of it. When the weather is too wet for this business he plows up the stubble fields for winter fallows. Acorns are sown at this time, and forest and fruit trees are planted. At the very close of the month a few flowers still cheer the eye; and there is a second blow of some kinds, particularly the woodbine. But the scent of all these late flowers is comparatively very faint. The greenhouse, however, is in high perfection at this period, and by its contrast with the nakedness of the fields and garden is now doubly grateful.

Unconscious of a less propitious clime
There blooms exotic beauty, warm and snug,
While the winds whistle and the snows descend.
The spiry myrtle with unwithering leaf
Shines there and flourishes. The golden boast
Of Portugal and Western India there,
The ruddier orange and the paler lime,
Peep thro' their polished foliage at the storm,
And seem to smile at what they need not fear.
Th' amomum there with intermingling flowers

And cherries hangs her twigs. Geranium boasts
Her crimson honours; and the spangled beau,
Ficoides, glitters bright the winter long.

All plants of every leaf that can endure
The winter's frown, if screen'd from his shrewd
bite,

Live there and prosper. Those Ausonia claims,
Levantine regions these; th' Azores send
Their jessamine, her jessamine remote
Cassraia; foreigners from many lands,
They form one social shade, as if conven'd
By magic summons of th' Orphean lyre.

COWPER'S TASK.

NOVEMBER.

Now the leaf

Incessant rustles from the mournful grove ;
Oft startling such as studious walk below ;
And slowly circles thro' the waving air.

As the maturing and dispersing of seeds was a striking character of the last month, so the fall of the leaf distinguishes the present. From this circumstance the whole declining season of the year is often in common language denominated the *fall*. The melancholy sensations which attend this gradual death of vegetable nature, by which the trees are stripped of all their beauty, and left so many monuments of decay and desolation, forcibly suggest to the reflecting mind an apt comparison for the fugitive generations of

man. This quick succession of springing and falling leaves has been thus beautifully applied by Homer.

Like leaves on trees the race of man is found,
Now green in youth, now withering on the
ground.

Another race the following spring supplies,
They fall successive, and successive rise :
So generations in their course decay,
So flourish these, when those are passed away.

POPE'S HOMER.

The loss of verdure, together with the shortened days, the diminished warmth, and frequent rains, justify the title of the *gloomy month of November*: and it seems to be felt as such by other animals besides man.

In pensive guise,
Oft let me wander o'er the russet mead,
And thro' the sadden'd grove, where scarce is
heard
One dying strain, to cheer the woodman's toil.
Haply some widowed songster pours his plaint,
Far, in faint warblings, thro' the tawny copse,
While congregated thrushes, linnets, larks,
And each wild throat, whose artless strains so late
Swell'd

Swell'd all the music of the swarming shades,
Robb'd of their tuneful souls, now shivering fit
On the dead tree, a dull despondent flock ;
With not a brightness waving o'er their plumes,
And nought save chattering discord in their
note. THOMSON.

Intervals, however, of clear and pleasant weather occasionally happen ; and in general the autumnal months are, in our island, softer and less variable than the correspondent ones in spring. It long continues

The pale descending year, yet pleasing still.

In fair weather the mornings are sharp ; but the hoar-frost, or thin ice, soon vanishes before the rising sun.

The lengthened night elaps'd, the morning
shines,

Serene, in all her dewy beauty bright,
Unfolding fair the last autumnal day,
And now the mounting sun dispels the fog ;
The rigid hoar frost melts before his beam ;
And hung on every spray, on every blade
Of grass, the myriad dew-drops twinkle round.

THOMSON.

Sudden storms of wind and rain frequently occur, which at once strip the trees of their faded leaves, and reduce them to their state of winter nakedness.

O'er the sky the leafy deluge streams;
Till choak'd and matted with the dreary shower,
The forest-walks, at every rising gale,
Roll wide the wither'd waste, and whistle bleak.

THOMSON.

One of the first trees that becomes naked is the walnut, which is quickly succeeded by the mulberry, horse-chestnut, sycamore, lime, and ash; the elm retains its verdure for some time longer; the beech and oak are the latest deciduous forest trees in casting their leaves: apple and peach-trees often remain green till the latter end of November; and pollard oaks, and young beeches, lose not their withered leaves, till they are pushed off by the new ones of the succeeding spring.

The wood-pigeon, or stock-dove, the latest in its arrival of the winter birds of passage, makes its appearance about the middle

middle of the month. When pinched by hunger it will eat the young tops of turnips, but beech mast is its favourite food; and before the old beech woods in the southern parts of the island were so much thinned, the multitudes of stock-doves that annually resorted thither, probably from Sweden and the north of Germany, were almost incredible. They might be seen, like rooks, in long strings of a thousand or more, directing their evening flight to the thick woods, where they were shot in great numbers by the fowlers who awaited their arrival.

Salmon begin now to ascend the rivers in order to spawn; they are extremely active fish, and will force their way almost to the sources of the most rapid streams, overcoming with surprising agility cataracts and other obstacles to their passage. There are several *salmon leaps*, as they are called, both in Wales, Scotland, and Ireland; at which numbers of fish are taken by nets or baskets placed under the fall,
into

into which they are carried after an unsuccessful leap.

The farmer endeavours to finish all his plowing in the course of the month, and then lays up his instruments till the next spring.

Cattle and horses are taken out of the exhausted pastures, and kept in the yard or stable. Hogs are put up to fatten. Sheep are turned into the turnip-field, or in stormy weather fed with hay at the rick.

Bees require to be moved under shelter, and the pigeons in the dove-house to be fed.

DECEMBER.

Oh Winter! ruler of th' inverted year,
 Thy scatter'd hair with fleet like ashes fill'd,
 Thy breath congeal'd upon thy lips, thy cheeks
 Fring'd with a beard made white with other
 snows

Than those of age; thy forehead wrapt in clouds,
 A leafless branch thy sceptre, and thy throne
 A sliding car indebted to no wheels,
 But urg'd by storms along its slipp'ry way;
 I love thee, all unlovely as thou seem'st,
 And dreaded as thou art. COWPER'S TASK.

THIS month is, in general, the most unpleasant of any in the whole year: the day is rapidly decreasing, and the frost being seldom fully confirmed till quite the latter end of the year or the commencement of the next, vapours, and clouds, and storms form the only vicissitudes of weather, thus fully justifying the expression in Shakespear,

The rain and wind beat dark December.

Every

Every change seems only an advance towards the stagnation and death of nature, towards universal gloom and desolation.

No mark of vegetable life is seen,

No bird to bird repeats his tuneful call,

Save the dark leaves of some rude evergreen,

Save the lone redbreast on the moss-grown
wall.

SCOTT.

Several of the wild quadrupeds and amphibious animals now retire to their winter quarters, which they never, or but seldom, quit till the return of spring. Of these some lay up no stores of provision, and therefore become entirely torpid till the warm weather brings out them and their food at the same time. To this class belong the frog, the lizard, the badger, hedge-hog, and bat, all of which feed on insects or vegetables. The frog shelters itself in the mud at the bottom of ponds and ditches; the lizard, badger, and hedge-hog, retire to holes in the earth; and the bat makes choice of caverns,
barns,

barns, deserted houses, and coal-pit shafts, where it remains suspended by the claws of its hind feet, and closely wrapt up in the membranes of the fore-feet. Bats, however, are observed to be stirring at all times of the year, when the warmth of the evening is equal to 50 degrees of the thermometer; and a heat of 45 degrees is found sufficient to revive the various species of gnats, which are the favourite food of this animal.

Dormice also lie torpid the greater part of the winter, though they lay up considerable stores of food; an occasional warm day revives them, when they eat a little, but soon relapse into their former condition.

Squirrels, water-rats, and field-mice, provide large magazines of provision, the former of nuts, the others of acorns, potatoes, &c. They are not known to become torpid, though they stir but little abroad, and probably sleep more at this time than in the summer.

The

The immediate cause of torpidity in animals cannot perhaps be very satisfactorily explained; there are, however, certain well-known facts which appear evidently to point out how essential a certain degree of cold is to the production of this effect.

If a frog be immersed in water at 32 degrees, or the freezing point, it becomes perfectly torpid in a few moments; and the gradual application of a warmth of 50 degrees will in a short time restore it to a state of activity: in man the effect of immersion in cold water, and of cold in general, is to render the pulsations of the heart less frequent; and if increased to a certain degree, to bring on a deep torpid sleep: in all the known instances, indeed, the termination to this sleep has been death; though reasoning from analogy, there seems no reason to suppose that torpor gradually brought on, and in circumstances where the body is excluded from a continual change of fresh cold air, should be attended with such fatal consequences.

The

The only vegetables which now flourish, are several species of mosses and *lichens*, or liverworts. The mosses put forth their minute parts of fructification during the winter months, and offer a curious spectacle to the botanist at a time when the rest of nature is dead to him. There are species of mosses adapted to every variety of situation, but they are very little, if at all, used in commerce, domestic economy, or as food either for man or beast. Lichens cover ditch-banks, heaths, walls, rocks, and other neglected places, with a scaly, branched, or leather-like substance; the different species of which have been applied to several important purposes. One kind, consisting of white flexible branches covering the tops of the highest mountains in this island, and overspreading the surface of the ground in Norway and Lapland, is called the Rhendeer lichen; from its being the sole winter subsistence of the rhendeer, the domestic cattle of the Laplanders.

Laplanders. The Iceland lichen, another species, is used when fresh medicinally as a purgative, but when dried is no contemptible substitute for bread to the inhabitants of the arctic regions: it is mixed with either boiling milk or water, both of which it turns to a thick gruel-like consistence, affording a good deal of nourishment. Many kinds are made use of as dying drugs, with considerable success; especially a grey one that is found in the Canary islands, known in commerce by the name of archil, and much esteemed for its rich purple dye, fugitive indeed, but extremely beautiful, and used for giving a lustre to silks.

Lichens are also of considerable service in the economy of nature, in forming upon barren places a stratum of vegetable mould for the support of larger and more useful plants. If a castle or other edifice, by being deserted and ruined, returns to the dominion of nature, it soon becomes covered with the various kinds of lichens,
which

which deriving almost their whole nourishment from the air and rain will readily grow on a bare rock. After some generations of these have grown up and decayed, the crevices become filled with a fine mould sufficient for the support of mosses and other minute plants. These successively decaying add to the collection of earth, which at length suffices for the supply of a few winged seeds of ash or sycamore, the minute fibres of whose roots insinuating themselves into the small interstices formed by time or the injuries of the weather, derive thence fresh nourishment, and by their gradual enlargement at length split in pieces and overthrow the most massy towers.

On the 21st of December happens the *winter solstice*, or shortest day; when the sun is something less than eight hours above the horizon even in the southern parts of the island. Soon after this, frost and snow generally begin to set in for the rest of the winter. The farmer has little

to do out of doors in the course of this month. His principal attention is bestowed on the feeding and management of his cattle, and various matters of household economy.

The festival of Christmas occurs very seasonably to cheer this comfortless period. Great preparations are made for it in the country, and plenty of rustic dainties are provided for its celebration according to the rites of antient hospitality. The old year steals away unlamented and scarcely perceived; and a new one begins with lengthening days and brighter skies, inspiring fresh hopes and pleasing expectations.

These naked shoots
Barren as lances, among which the wind
Makes wintry music, fighting as it goes,
Shall put their graceful foliage on again,
And more aspiring, and with ampler spread,
Shall boast new charms, and more than they
have lost.

Then, each in its peculiar honours clad,
Shall publish even to the distant eye
Its family and tribe. Laburnum rich

In streaming gold; fyinga iv'ry-pure;
The scented and the scentless rose; this red
And of an humbler growth, the other tall,
And throwing up into the darkeſt gloom
Of neighbouring cypreſs or more ſable yew,
Her ſilver globes, light as the foamy ſurf
That the wind ſevers from the broken wave.
Althea with the purple eye, the broom
Yellow and bright as bullion unalloy'd,
Her bloſſoms, and luxuriant above all
The jaſmine, throwing wide her elegant ſweets,
The deep dark green of whoſe unvarniſh'd leaf
Makes more conſpicious and illumines more
The bright profuſion of her ſcatter'd ſtars.
Theſe have been, and theſe ſhall be in their day,
And all this uniform uncoloured ſcene
Shall be diſmantled of its fleecy load,
And ſluſh into variety again.

COWPER'S TASK.

On the SUN's Passage through the SIGNS of the ZODIAC.

THE *Zodiac* is an imaginary broad circle in the heavens, within which all the planets have their paths. The central line of this circle is called the *Ecliptic*, or apparent path of the sun in its annual course. It is, however, the *real* path of the earth, as viewed from the sun. The zodiac is divided into twelve parts of 30 degrees each, called *signs*, from the clusters of stars, or constellations, through which it passes. These signs have all been distinguished by imaginary figures, which are traced out upon the celestial globe, and which give name to them. They form, therefore, an astronomical calendar of 12 solar months, which in the following manner correspond with the common reckoning of the months.

The Sun enters into

ARIES, or the <i>Ram</i>	March 20.
TAURUS, or the <i>Bull</i>	April 19.
GEMINI, or the <i>Twins</i>	May 21.
CANCER, or the <i>Crab</i>	June 22.
LEO, or the <i>Lion</i>	July 23.
VIRGO, or the <i>Virgin</i>	August 23.
LIBRA, or the <i>Balance</i>	September 23.
SCORPIO, or the <i>Scorpion</i>	October 23.
SAGITTARIUS, or the <i>Archer</i>	November 22.
CAPRICORNUS, or the <i>Wild Goat</i> . .	December 22.
AQUARIUS, or the <i>Waterer</i>	January 19.
PISCES, or the <i>Fishes</i>	February 18.

THE END.

EXPLANATION OF THE PLATE.

LET S represent the sun; A B C D the earth's orbit; N S her axis: E Q the equator; and the figures distinguished by the months March, June, September, and December, four different positions of the earth in her annual motion round the sun. In consequence of the inclination of the earth's axis, which is always directed to nearly the same point in the heavens, and is therefore always nearly parallel to itself in every part of the earth's orbit round the sun, it will appear, that in the months of March and September the terminating circle of light and darkness on the globe will pass through the two poles, producing equal day and night in all parts of it, which seasons are called the vernal and autumnal equinoxes. But in the month of June, at the time called the

the summer solstice, the terminating circle leaves the north pole a great way in the light, and the south pole equally in darkness, thereby producing summer, or long days, to all the parts of the northern hemisphere; and winter, or short days, to all those of the southern. In December, or at the winter solstice, on the contrary, the north pole is in darkness, and the south pole in light; consequently the seasons in each hemisphere are the reverse of the former state.

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N. MANCHESTER,
INDIANA

